

MEMORANDUM

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

NORTHERN REGIONAL OFFICE

13901 Crown Court

Woodbridge, VA 22193

SUBJECT: Modification of VPDES Permit VA0087033

TO: Dominion – Gordonsville Power Station 2011 Modification File

FROM: Susan Mackert

DATE: November 22, 2010

REVISION DATE: January 12, 2011

On May 14, 2010, The Department of Environmental Quality – Northern Regional Office (DEQ-NRO) received a permit modification request from Dominion Resources Services for the Gordonsville Power Station located in Louisa County. The modification was requested by the permittee to address changes in the oily wastewater collection system and to incorporate new copper limitations resulting from the Water Effects Ratio (WER) and chemical translator studies. This memorandum summarizes the changes to the permit dated January 31, 2008, and serves as the modification to the original Fact Sheet (Attachment 1).

The following discussions are numbered as they appear in the original Fact Sheet. The information contained in this memorandum replaces or expands upon the information in the original Fact Sheet.

10. Wastewater Sources and Treatment Description

The facility diagram/water flow diagram has been revised to account for changes in the facility's oil-water separator system in response to recent improvements of the oily wastewater collection system. The revised diagram was submitted as part of the modification package and can be found as Attachment 2 of this modification memo.

Current Permitted Process

The existing permit authorizes the discharge from one oil water separator via Outfall 102. This oil water separator receives wastewaters from each of the two generating units, with the oil water separator and associated piping being located underground. Discharge from Outfall 102 is to the facility's holding pond with final discharge to the South Anna River via Outfall 001.

Because of the new treatment process described below, Outfall 102 is no longer in service. The discharge location to the holding pond was capped underground in late 2009.

New Treatment Process Description

The new oily wastewater treatment system has two above ground oil water separators, one for each generating unit. These separators came on-line in April 2010. The two separators receive similar wastewaters from each generating unit. In addition to the installation of the two above ground separators, the station has replaced the underground piping system with an above-ground system that facilitates inspection and maintenance. Both oil water separators discharge to a concrete perimeter ditch, which also receives storm water runoff from the majority of the property. The perimeter ditch enters the facility's holding pond with final discharge to the South Anna River via Outfall 001.

The permittee has requested that the discharge from the two oil water separators be treated as a single internal discharge with the outfalls designated as 102A (Unit 1 oil water separator) and 102B (Unit 2 oil water separator).

The DEQ compliance tracking database does not acknowledge non-numeric outfall designations. Therefore, the proposed naming convention of Outfall 102A and Outfall 102B cannot be applied. Staff recommends the discharge from the Unit 1 oil water separator be deemed Outfall 103 and the discharge from the Unit 2 oil water separator be deemed Outfall 104. This naming convention facilitates tracking by compliance as well as participation by the facility in the electronic discharge monitoring report (eDMR) program.

In response to the aforementioned improvements, Table 1 was modified to reflect the discharge sources to Outfall 103 and Outfall 104. See Section 17.h and Section 17.i of this memorandum for additional discussion on Outfall 103 and Outfall 104.

TABLE 1 – Outfall Description				
Outfall Number	Discharge Sources	Treatment	Average Flow	Outfall Latitude and Longitude
001	Internal Outfall 101 Internal Outfall 103 Internal Outfall 104 Storm Water Discharge (901)	Dechlorination Bio-World (Algae Control) Gypsum (Hardness Control) Sodium Bicarbonate (Alkalinity) Lime (pH) Aeration	0.05 MGD	38° 07'27" N 78° 12'13" W
101	Boiler blowdown Periodic discharge of demineralized water	Routed through cooling system prior to discharge	0.013 MGD	38° 07'26" N 78° 12'13" W
102	N/A (OWS removed from use)	N/A	N/A	N/A
103	Unit 1 condensate drain pot sump Diesel fuel oil tank (containment) Fuel unloading area runoff Unit 1 steam turbine oily water drains Unit 1 CT oily water drains Silica analyzer drains Water injection skid Vacuum pump seals Boiler feed pumps False start drains Diesel fire pump seal leakage and drains	Oil-Water Separator	0.001 MGD	38° 07'30.4" N 78° 12'10.0" W
104	Unit 2 condensate drain pot sump Unit 2 steam turbine oily water drains Unit 2 CT oily water drains Water injection skid drain Vacuum pump seals Boiler feed pumps False start drains	Oil-Water Separator	0.0002 MGD	38° 07'27.2" N 78° 12'8.5" W
901	Emergency storm water discharge (via 001)	No treatment prior to discharging to holding pond	Varies	38° 07'27" N 78° 12'13" W

14. Site Inspection

Performed by Susan Mackert and Rebecca Johnson on August 31, 2010. The site visit memorandum can be found as Attachment 3 of this modification memo.

15b. Receiving Stream Water Quality and Water Quality Standards - Receiving Stream Water Quality Criteria

Metals Criteria

The Water Quality Criteria for some metals are dependent on the receiving stream's hardness (expressed as mg/L calcium carbonate). In conjunction with the WER and chemical translator studies, Dominion also conducted a hardness study to gather additional data for the effluent and receiving stream (South Anna River). Using data obtained from the hardness study an average receiving stream hardness of 65 mg/L and an average effluent hardness of 8.5 mg/L were used to calculate the hardness-dependent metals criteria. Because actual hardness data exists for the effluent and South Anna River these values must be utilized. Calculated or default values are used in the absence of valid analytical data. The hardness-dependent metals criteria shown in Attachment 4 are based on the above values.

17c(3). Effluent Screening, Wasteload Allocation, and Effluent Limit Development – Effluent Limitations Toxic Pollutants, Outfall 001 – Metals

During the last reissuance, it was determined that a copper limit of 5.8 µg/L was necessary. Semi-annual monitoring and a three year schedule of compliance were included in the 2008 permit reissuance. The copper limit was to become effective on January 20, 2011.

In response to the limit, Dominion opted to pursue a Water Effects Ratio (WER) streamlined study for copper as provided for in the Virginia Water Quality Standards at 9VAC25-260-140. Dominion also completed a chemical translator and characterization of in-stream hardness.

Water Effects Ratio

The Dominion study followed EPA guidance for a Streamlined Water Effect Ratio Procedure for the Discharges of Copper (EPA 822-R-01-05). The Final Streamlined WER Report was submitted to DEQ on May 14, 2010. Water Quality Standards staff reviewed the WER study and approved the use of a dissolved copper WER of 2.593 to adjust the copper criteria (Attachment 5). The WER study was submitted to the U.S. EPA for their review on October 28, 2010. In correspondence dated January 5, 2011, EPA had no comments on the WER study.

Per 9VAC25-260-140F, the formulas for the freshwater acute and chronic criteria (µg/L) for copper utilize a default WER value of 1.0 unless shown otherwise.

Acute Criteria

$$\text{WER} \times [e^{(0.9422[\ln(\text{hardness})]-1.700)}] \times (CF_a)$$

Where $CF_a = 0.96$

Chronic Criteria

$$\text{WER} \times [e^{(0.8545[\ln(\text{hardness})]-1.702)}] \times (CF_c)$$

Where $CF_c = 0.96$

A Wasteload Allocation analysis was conducted using the average receiving stream hardness of 65 mg/L and an average effluent hardness of 8.5 mg/L (Attachment 5). The following acute and chronic copper Waste Load Allocations (WLAs) were calculated.

Acute WLA

6.8 µg/L

Chronic WLA

6.5 µg/L

Because the formulas for the freshwater acute and chronic criteria (µg/L) for copper utilize a default WER value of 1.0, the above WLA was multiplied by the WER value of 2.593. The following acute and chronic copper criteria for Dominion – Gordonsville were derived.

Acute Criteria

18 µg/L

Chronic Criteria

16 µg/L

Chemical Translator

In 1993, EPA recommended that dissolved metal concentrations be used for the application of metals aquatic life criteria and that State water quality standards be based on dissolved metals. However, permit limits for metals shall be expressed as total recoverable. An additional calculation (translator) is applied to the Waste Load Allocation (WLA) to produce a permit limit expressed as total recoverable.

The Derivation of a Chemical Translator and Characterization of In-stream Hardness Report was submitted to DEQ on May 14, 2010. Central Office staff reviewed the translator study and approved the use of a translator of 0.4052 (Attachment 6) on September 7, 2010.

Per EPA guidance The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion (EPA 823-B-96-007), the translator is applied by dividing a dissolved WLA by the translator to produce a total recoverable limit.

Using the approved translator value of 0.4052, the final acute and chronic criteria for Dominion – Gordonsville were derived.

<u>Acute Criteria</u>		<u>Chronic Criteria</u>	
$\frac{18 \mu\text{g/L}}{0.4052}$	=	$\frac{16 \mu\text{g/L}}{0.4052}$	=
	44 $\mu\text{g/L}$		39 $\mu\text{g/L}$

Using the above criteria and copper monitoring data submitted from 2004 –2010 (including that data used to determine the existing copper limit), a copper limit is no longer warranted (Attachment 6).

17e. Effluent Limitations, Outfall 901 – Storm Water Only Pollutants

40 CFR Part 122.26 (c)(1)(i)(E)(1-3) requires quantitative data based on samples collected during storm events be analyzed for the following: any pollutant limited in an effluent guideline to which the facility is subject, any pollutant listed in the facility's NPDES permit for its process wastewater and oil and grease (O&G), pH, BOD₅, Chemical Oxygen Demand (COD), TSS, total phosphorous, total Kjeldahl nitrogen and nitrate plus nitrite. Additionally, total recoverable iron has an established monitoring cut-off concentration of 1.0 mg/L under Sector O (Steam Electric Generating Facilities) of the Multi Sector General Storm Water permit.

Monitoring for total recoverable copper was added based on the implementation of a copper limit at Outfall 001. Because a copper limit is no longer warranted at Outfall 001, copper monitoring can be removed from Outfall 901.

17g. Effluent Screening, Wasteload Allocation, and Effluent Limit Development – Effluent Limitations, Outfall 102 – Federal Effluent Guidelines

Effluent limitations and monitoring requirements for Outfall 102 have been removed from the permit with this modification as the outfall is no longer in service.

17h. Effluent Screening, Wasteload Allocation, and Effluent Limit Development – Effluent Limitations, Outfall 103 – Federal Effluent Guidelines

The discharge from Outfall 103 enters a concrete perimeter ditch, which also receives storm water runoff from the majority of the property. Because there is potential for storm water to impact the quality of the discharge from Outfall 103, compliance samples for Outfall 103 shall be collected after treatment by the oil-water separator and prior to mixing with storm water in the perimeter ditch.

The discharge from Outfall 103 is addressed by Federal Effluent Guidelines established in 40 CFR Part 423.15 – Steam Electric Power Generating Point Source Category. Outfall 103 is identified as a regulated outfall under the New Source Performance Standards due to the discharge from the oil-water separator. This discharge is defined in 40 CFR Part 423.11 of the Federal Effluent Guidelines as a low volume waste source as it is not otherwise listed in the guidelines. Therefore, those standards must apply.

Low volume wastes, as previously acknowledged by the facility, will be subject to concentration limits for Total Suspended Solids (TSS) and Oil and Grease (O&G) at Outfall 103. 40 CFR Part 423.15(m) states, "At the permitting authority's discretion, the quantity of pollutant allowed to be discharged may be expressed as a concentration limit instead of the mass based limitation specified in paragraphs (c) through (j) of this section. Concentration limits shall be based on the concentrations specified in this section". In addition, 40 CFR Part 423.15(n) states, "In the event that waste streams from various sources are combined for treatment or discharge, the quantity of each pollutant or pollutant property controlled in paragraphs (a) through (m) of this section attributable to each controlled waste source

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shall not exceed the specified limitation for that waste source". It is staff's best professional judgment that based on the level of treatment provided by the facility, 40 CFR Part 423.15(m) and 40 CFR Part 423.15(n) are applicable and shall be applied to address low volume wastes from the facility.

The existing permit requires once monthly (1/M) sampling of the discharge from the oil-water separator associated with Outfall 102. A monthly average TSS limit of 30 mg/L and a monthly average O&G limit of 15 mg/L has been established based on the aforementioned effluent guidelines.

With this modification the permittee has requested to alternate monthly compliance sampling requirements between the two separators. While the discharge from the generating units remains the same, the installation of the new oily wastewater collection system represents an upgrade to an existing treatment system as well as a significant change in existing operating conditions.

Per agency guidance, reductions in monitoring frequency must be based on past performance. As of the date of the modification there is insufficient discharge data from the new oily wastewater collection system to establish performance and thereby support a reduction in monitoring frequency. It is staff's best professional judgement that a monitoring frequency of once per month (1/M) be implemented for Outfall 103 for the remainder of the permit term. A monthly average TSS limit of 30 mg/L and a monthly average O&G limit of 15 mg/L will be carried forward in accordance with the Federal Effluent Guidelines established in 40 CFR Part 423.15 – Steam Electric Power Generating Point Source Category. Effluent data obtained during this period will be reviewed at the time of reissuance in 2013 to determine if a reduction in monitoring frequency is warranted.

17i. Effluent Screening, Wasteload Allocation, and Effluent Limit Development – Effluent Limitations, Outfall 104 – Federal Effluent Guidelines

The discharge from Outfall 104 enters a concrete perimeter ditch, which also receives storm water runoff from the majority of the property. Because there is potential for storm water to impact the quality of the discharge from Outfall 104, compliance samples for Outfall 104 shall be collected after treatment by the oil-water separator and prior to mixing with storm water in the perimeter ditch.

The discharge from Outfall 104 is addressed by Federal Effluent Guidelines established in 40 CFR Part 423.15 – Steam Electric Power Generating Point Source Category. Outfall 104 is identified as a regulated outfall under the New Source Performance Standards due to the discharge from the oil-water separator. This discharge is defined in 40 CFR Part 423.11 of the Federal Effluent Guidelines as a low volume waste source as it is not otherwise listed in the guidelines. Therefore, those standards must apply.

Low volume wastes, as previously acknowledged by the facility, will be subject to concentration limits for Total Suspended Solids (TSS) and Oil and Grease (O&G) at Outfall 104. 40 CFR Part 423.15(m) states, "At the permitting authority's discretion, the quantity of pollutant allowed to be discharged may be expressed as a concentration limit instead of the mass based limitation specified in paragraphs (c) through (j) of this section. Concentration limits shall be based on the concentrations specified in this section". In addition, 40 CFR Part 423.15(n) states, "In the event that waste streams from various sources are combined for treatment or discharge, the quantity of each pollutant or pollutant property controlled in paragraphs (a) through (m) of this section attributable to each controlled waste source shall not exceed the specified limitation for that waste source". It is staff's best professional judgment that based on the level of treatment provided by the facility, 40 CFR Part 423.15(m) and 40 CFR Part 423.15(n) are applicable and shall be applied to address low volume wastes from the facility.

The existing permit requires once monthly (1/M) sampling of the discharge from the oil-water separator associated with Outfall 102. A monthly average TSS limit of 30 mg/L and a monthly average O&G limit of 15 mg/L has been established based on the aforementioned effluent guidelines.

With this modification the permittee has requested to alternate monthly compliance sampling requirements between the two separators. While the discharge from the generating units remains the same, the installation of the new oily wastewater collection system represents an upgrade to an existing treatment system as well as a significant change in existing operating conditions.

Per agency guidance, reductions in monitoring frequency must be based on past performance. As of the date of the modification there is insufficient discharge data from the new oily wastewater collection system to establish performance and thereby support a reduction in monitoring frequency. It is staff's best professional judgement that a monitoring frequency of once per month (1/M) be implemented for Outfall 103 for the remainder of the permit term. A monthly average TSS limit of 30 mg/L and a monthly average O&G limit of 15 mg/L will be carried forward in accordance with Federal Effluent Guidelines established in 40 CFR Part 423.15 – Steam Electric Power Generating Point Source Category. Effluent data obtained during this period will be reviewed at the time of reissuance in 2013 to determine if a reduction in monitoring frequency is warranted.

19. Effluent Limitations/Monitoring Requirements - Outfall 001

The following table has been modified to reflect the removal of the copper limit as well the monitoring and reporting of hardness. It is staff's best professional judgement that hardness data is no longer necessary as metals are not being monitored and reported.

Average flow is 0.05 MGD.

Effective Dates: During the period beginning with the permit's modification date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	1/M	Estimate
pH	3	NA	NA	6.0 S.U.	9.0 S.U.	1/M	Grab
Temperature (May – October)	3	NA	NA	NA	32 °C	1/M	IS
DO	3	NA	NA	5.0 mg/L	NA	1/M	Grab
Total Residual Chlorine (after dechlorination)	2, 3	0.016 mg/L	0.016 mg/L	NA	NA	1/M	Grab
Total Petroleum Hydrocarbons (mg/L)*	2	NL	NL	NA	NA	1/6M**	Grab
Acute Toxicity – <i>C. dubia</i> (TU _a)	2	NA	NA	NA	NL	1/Y	5G/8HC
Acute Toxicity – <i>P. promelas</i> (TU _a)	2	NA	NA	NA	NL	1/Y	5G/8HC

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgement
3. Water Quality Standards

MGD = Million gallons per day.

NA = Not applicable.

NL = No limit; monitor and report.

S.U. = Standard units.

IS = Immersion stabilization.

1/M = Once every month.

1/6M = Once every six months.

1/Y = Once every twelve months.

5G/8HC = 5 Grab/Eight Hour Composite - Consisting of five (5) grab samples collected at hourly intervals until the discharge ceases or five (5) grab samples taken at equal time intervals for the duration of the discharge if the discharge is less than 8 hours in length.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

*Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW-141 (1995), or by EPA SW-846 Method 8015B (1996) for diesel range organics, or by EPA SW-846 Method 8270C (1998). If Method 8270C is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.

**The semi-annual monitoring periods shall be January 1 – June 30 and July 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (July 10 and January 10, respectively).

19. Effluent Limitations/Monitoring Requirements - Outfall 102 (Oil-Water Separator)

This table has been removed from the permit as Outfall 102 is no longer in service.

19. Effluent Limitations/Monitoring Requirements - Outfall 103 (Unit 1 Oil-Water Separator)

The following table, reflecting the limitations and monitoring requirements for Outfall 103, has been added to the permit in response to changes in the oily wastewater collection system .

Average flow is 0.001 MGD

Effective Dates: During the period beginning with the permit's modification date and lasting until the expiration date

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NA	1/M	Estimate
Total Suspended Solids	1	30 mg/L	100 mg/L	NA	NA	1/M	Grab
Oil and Grease	1	15 mg/L	20 mg/L	NA	NA	1/M	Grab

The basis for the limitations codes are:

MGD = Million gallons per day.

1/M = Once every month.

1. Federal Effluent Requirements

NA = Not applicable.

NL = No limit; monitor and report.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

19. Effluent Limitations/Monitoring Requirements - Outfall 104 (Unit 2 Oil-Water Separator)

The following table, reflecting the limitations and monitoring requirements for Outfall 104, has been added to the permit in response to changes in the oily wastewater collection system .

Average flow is 0.0002 MGD

Effective Dates: During the period beginning with the permit's modification date and lasting until the expiration date

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NA	1/M	Estimate
Total Suspended Solids	1	30 mg/L	100 mg/L	NA	NA	1/M	Grab
Oil and Grease	1	15 mg/L	20 mg/L	NA	NA	1/M	Grab

The basis for the limitations codes are:

MGD = Million gallons per day.

1/M = Once every month.

1. Federal Effluent Requirements

NA = Not applicable.

NL = No limit; monitor and report.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

19. Effluent Limitations/Monitoring Requirements - Outfall 901 (Emergency Storm Water Overflow)

The following table has been modified to reflect the removal of copper monitoring as it is no longer warranted.

Average flow varies dependent on precipitation.

Effective Dates: During the period beginning with the permit's modification date and lasting until the expiration date

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency	Sample Type
Flow (Gallons)	NA	NL	NA	NA	NL	1/Dis	Estimate
pH (S.U.)	2	NA	NA	NL	NL	1/Dis	Grab
Total Suspended Solids (mg/L)	1	NA	NA	NA	NL	1/Dis	Grab
Oil and Grease (mg/L)	1	NA	NA	NA	NL	1/Dis	Grab
Total Petroleum Hydrocarbons* (mg/L)	1	NA	NA	NA	NL	1/Dis	Grab
Chemical Oxygen Demand (mg/L)	2	NA	NA	NA	NL	1/Dis	Grab
Iron, Total Recoverable	2	NA	NA	NA	NL	1/Dis	Grab

The basis for the limitations codes are:

MGD = Million gallons per day.

1/Dis=Once each time a discharge occurs.

1. Federal Effluent Requirements

NA = Not applicable.

2. Best Professional Judgement

NL = No limit; monitor and report.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

*Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW-141 (1995), or by EPA SW-846 Method 8015B (1996) for diesel range organics, or by EPA SW-846 Method 8270C (1998). If Method 8270C is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.

20b. Other Permit Requirements – Schedule of Compliance

A three year schedule of compliance was established in the existing permit to allow the permittee time to achieve compliance with new permit limits for Total Recoverable Copper. Because this item has been addressed, language pertaining to the compliance schedule has been removed from the permit.

20e. Other Permit Requirements – Storm Water Management Plan

Storm water language was modified to be consistent with the 2009 – 2014 VPDES General Permit for Storm Water Discharges Associated with Industrial Activity.

21f. Other Special Conditions – Polychlorinated Biphenyl

In response to Dominion's request for clarification of the Steam Electric Guideline requiring no discharge of Polychlorinated Biphenyl compounds (PCBs), the PCB special condition language has been modified to reflect Method 608 as appropriate for determining compliance with the Federal Effluent Guideline. The special condition now reads as follows:

- f) Polychlorinated Biphenyl. There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid. Compliance with this requirement will be determined using EPA Method 608.

23. Changes to Permit from the Previously Issued Permit

a) Special Conditions

- The PCB special condition was modified to reflect Method 608 as appropriate for determining compliance with the Federal Effluent Guideline.
- Schedule of Compliance requirements previously found within Part 1.C. of the permit have been removed with this modification as the language is no longer necessary.
- Toxics Monitoring Program Requirements previously found within Part 1.D of the permit have been moved to Part 1.C with this modification due to the removal of the Schedule of Compliance.
- Storm Water Monitoring Requirements previously found within Part 1.E of the permit have been moved to Part 1.D with this modification due to the removal of the Schedule of Compliance.

b) Monitoring and Effluent Limitations

- Effluent limitations and monitoring requirements previously found within Section 17.g (Effluent Limitations, Outfall 102 – Federal Effluent Guidelines) have been removed from the permit with this modification as this outfall is no longer in service.
- Effluent limitations and monitoring requirements found within Section 17.h (Effluent Limitations, Outfall 103 – Federal Effluent Guidelines) have been implemented with this modification as this is a new outfall location.
- Effluent limitations and monitoring requirements found within Section 17.i (Effluent Limitations, Outfall 104 – Federal Effluent Guidelines) have been implemented with this modification as this is a new outfall location.
- The effluent limitations and monitoring summary previously found within Section 17.h of the Fact Sheet has been moved to Section 17.j with this modification due to the addition of monitoring requirements for two additional outfalls.
- Based on the Water Effects Ratio (WER) and chemical translator studies a copper limit at Outfall 001 is no longer warranted. As such, the copper limit of 5.8 µg/L has been removed from the permit.
- Based on the Water Effects Ratio (WER) and chemical translator studies copper and hardness monitoring and reporting have been removed from Outfall 001.
- Copper monitoring and reporting have been removed from Outfall 901.
- Demineralizer trailer drainage was added as an allowable non-storm water discharge in Part 1.D.f.1 of the permit.

- The reference to the copper QL has been removed from Part 1.B.1.a of the permit.
- The reference to appropriate analytical methods for copper have been removed from Part 1.B.1.d of the permit.

Fact Sheet Attachments – Table of Contents

Dominion – Gordonsville Power Station VA0087033

2011 Modification

Attachment 1	2008 Fact Sheet
Attachment 2	Facility Flow Diagram
Attachment 3	Site Visit Memorandum
Attachment 4	Water Effects Ratio (WER) Study Review
Attachment 5	Chemical Translator Study Review
Attachment 6	WER Wasteload Allocation Analysis – Limit Derivation
Attachment 7	Public Notice
Attachment 8	EPA Checklist

This document gives pertinent information concerning the reissuance of the VPD permit listed below. This permit is being processed as a Minor, Industrial permit. The discharge results from the operation of a 240 MW natural gas and oil fired combined cycle power plant. This permit action consists of updating the WQS and updating boilerplate. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260-00 et seq.

1. Facility Name and Mailing Address: Virginia Power and Electric Co. SIC Code : 4911 – Electric Services
 – Gordonsville Power Station
 5000 Dominion Boulevard
 Glen Allen, VA 23060
 Facility Location: 115 Red Hill Road County: Louisa
 Gordonsville, VA 22942
 Facility Contact Name: Robert Williams Telephone Number: (804) 273-2994
2. Permit No.: VA0087033 Expiration Date of previous permit: September 4, 2007
 Other VPDES Permits associated with this facility: N/A
 Other Permits associated with this facility: Air (Registration # 40808), VWP (Permit # 91-1631), Waste (EPA ID# VA0000125211), Petroleum (ID # 3027492)
 E2/E3/E4 Status: N/A
3. Owner Name: Virginia Electric and Power Company
 Owner Contact/Title: J. David Rives Vice President Fossil and Hydro Telephone Number: (804) 273-3220
4. Application Complete Date: April 30, 2007
 Permit Drafted By: Susan Mackert Date Drafted: July 9, 2007
 Draft Permit Reviewed By: Alison Thompson December 4, 2007
 Date Reviewed: July 16, 2007
 Public Comment Period : Start Date: December 28, 2007 End Date: December 6, 2007
 January 28, 2008
5. Receiving Waters Information: (See Attachment 1 for the Flow Frequency Determination)
 Receiving Stream Name : South Anna River
 Drainage Area at Outfall: 6.1 sq.mi. River Mile: 100.53
 Stream Basin: York Subbasin: None
 Section: 3 Stream Class: III
 Special Standards: None Waterbody ID: VAV-F01R
 7Q10 Low Flow: 0.04 MGD 7Q10 High Flow: 0.56 MGD
 1Q10 Low Flow: 0.03 MGD 1Q10 High Flow: 0.46 MGD
 Harmonic Mean Flow: 0.99 MGD 30Q5 Flow: 0.15 MGD
 303(d) Listed: Yes 30Q10 Flow: N/A
 TMDL Approved: Yes (*E. coli*) Date TMDL Approved: August 2, 2006
6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:
☒ State Water Control Law ☒ EPA Guidelines
☒ Clean Water Act ☒ Water Quality Standards
☒ VPDES Permit Regulation ☐ Other
☒ EPA NPDES Regulation

7. Licensed Operator Requirements: N/A

8. Reliability Class: N/A

9. Permit Characterization:

<input checked="" type="checkbox"/> Private	<input checked="" type="checkbox"/> Effluent Limited	<input type="checkbox"/> Possible Interstate Effect
<input type="checkbox"/> Federal	<input checked="" type="checkbox"/> Water Quality Limited	<input checked="" type="checkbox"/> Compliance Schedule Required
<input type="checkbox"/> State	<input checked="" type="checkbox"/> Toxics Monitoring Program Required	<input type="checkbox"/> Interim Limits in Permit
<input type="checkbox"/> POTW	<input type="checkbox"/> Pretreatment Program Required	<input type="checkbox"/> Interim Limits in Other Document
<input checked="" type="checkbox"/> TMDL		

10. Wastewater Sources and Treatment Description:

All generated wastewater from the Gordonsville Power Station flows to a holding pond on site and then mixes with storm water runoff prior to discharging to the South Anna River via outfall 001. Discharge from outfall 001 is intermittent in nature (averaging once per week) and is dependent on electrical demand and rainfall.

Wastewater is generated by three main sources: 1) steam cycle boiler blowdown (which is routed through a cooling system prior to discharge to the holding pond), 2) discharge from the oil-water separator (which collects storm water and wash water runoff from the oil unloading area and turbine and gas generating areas as well as discharge from the diesel fire pump) and 3) periodic discharge of high purity water from the water demineralizer.

See Attachment 2 for the NPDES Permit Rating Worksheet.

A facility schematic/diagram was provided by the facility as part of the application package and can be found in the permit reissuance file.

TABLE 1 – Outfall Description

Outfall Number	Discharge Sources	Treatment	Average Flow	Outfall Latitude and Longitude
001	Internal Outfall 101 Internal Outfall 102 Storm Water Discharge (901)	Dechlorination	0.05 MGD	38° 07' 27" N 78° 12' 13" W
101	Boiler Blowdown Periodic discharge of demineralize water	Routed through cooling system prior to discharge	0.013 MGD	38° 07' 26" N 78° 12' 13" W
102	Runoff from fuel oil unloading Runoff from turbine and gas generating areas Discharge from diesel fire pump Discharge from washwater drains	Oil-Water Separator	0.004 MGD	38° 07' 26" N 78° 12' 13" W
901	Emergency storm water discharge (via 001)	No treatment prior to discharge to holding pond	Varies	38° 07' 27" N 78° 12' 13" W

See Attachment 3 for (Gordonsville, DEQ #172B) topographic map.

11. **Sludge Treatment and Disposal Methods:**

Dominion - Gordonsville is a power generation facility that does not treat domestic sewage and does not produce sewage sludge.

12. **Discharges, Intakes, Monitoring Stations, Other Items in Vicinity of Discharge:**

TABLE 2	
8-SAR097.82	DEQ ambient and biological station (at Route 603)
8-SAR099.84	DEQ fish tissue/sediment station (at Route 603)
8-SAR100.66	DEQ ambient water quality monitoring station (below Dominion – Gordonsville)
8-SAR100.67	DEQ ambient water quality monitoring station (above Gordonsville STP)
VA0021105	Gordonsville Sewage Treatment Plant
VA0076678	Shenandoah Crossing WWTP (design flow – 0.05 MGD)
VA0090743	Zion Crossroads WWTP (design flow – 0.10 MGD)
VAG250024	Klockner Pentaplast of America Incorporated - Gordonsville
VAG406073	Delmer R. Watson Residence (450 GPD)
VAR051197	Hafner Limited Liability Corporation
VAR051733	Wal*Mart Food Distribution Center #7016

13. **Material Storage:**

Please see Attachment 4 for a list of bulk chemicals stored on site (including the maximum storage capacity) and containment measures and locations.

14. **Site Inspection:** Performed by Susan Mackert on June 14, 2007. A compliance inspection was completed by Sharon Mack on September 11, 2007. Both inspections confirm that the application package received on November 30, 2006 is accurate and representative of actual site conditions. The inspection report memo is located in the permit reissuance file.

15. **Receiving Stream Water Quality and Water Quality Standards:**

a) Ambient Water Quality Data

Monitoring data is available for the receiving stream, South Anna River. The 2006 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report (IR) gives an impaired classification for the assessment unit segment, VAN-F01R_SAR02A02, for the benthic macroinvertebrate and *E. coli* parameters. The segment begins at the headwaters of the South Anna River and continues downstream until the confluence with Dove Fork. The segment, VAN-F01R_SAR02A02, also has an observed effect for total phosphorous.

Monitoring results from DEQ ambient and biological station 8-SAR097.82 (at Route 603), fish tissue/sediment station 8-SAR099.84 (at Route 603) and ambient water quality monitoring stations 8-SAR100.66 (below Dominion-Gordonsville discharge) and 8-SAR100.67 (above Gordonsville STP discharge) indicate the following impaired classifications:

- Sufficient exceedances of the instantaneous *E. coli* bacteria criterion (5 of 12 samples – 41.7%) were recorded at DEQ's ambient water quality monitoring station (8-SAR097.82) at the Route 603 bridge to assess this stream segment as not supporting of the recreation use goal for the 2006 water quality assessment.

- DEQ benthic macroinvertebrate biological monitoring finds this segment to be moderately impaired resulting in an impaired classification for the aquatic life use. Additionally, seven of 22 samples (31.8%) exceeded the total phosphorous screening value of 0.20 mg/L. The wildlife use is considered fully supporting. Fish consumption use was not assessed.

The complete planning statement is located within the permit reissuance file.

b) Receiving Stream Water Quality Criteria

Part IX of 9 VAC 25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream, South Anna River, is located within Section 3 of the York River Basin, and classified as a Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C, and maintain a pH of 6.0-9.0 standard units (S.U.).

Attachment 5a and Attachment 5b detail other water quality criteria applicable to the receiving stream.

Ammonia:

Effluent pH and temperature data were used to establish the ammonia water quality standard. Derivation of the 90th percentile values of the effluent pH and temperature data from January, 2004 to December, 2006 can be found in the permit reissuance file.

Metals Criteria:

The Water Quality Criteria for some metals are dependent on the receiving stream's hardness (expressed as mg/l calcium carbonate). The average hardness of the effluent is 30 mg/l. The hardness-dependent metals criteria shown in Attachment 5a are based on this value.

c) Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9 VAC 25-260-360, 370 and 380 designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, South Anna River, is located within Section 3 of the York River Basin. This section has not been designated with any special standards.

d) Threatened or Endangered Species

The Virginia DGIF Fish and Wildlife Information System Database was searched for records to determine if there are threatened or endangered species in the vicinity of the discharge. The following threatened or endangered species were identified within a 2 mile radius of the discharge: Bald Eagle, Loggerhead Shrike, Northern Harrier, Barn Owl, Red-Breasted Nuthatch, Brown Creeper, Winter Wren, Hermit Thrush, Golden-Crowned Kinglet and the Purple Finch. The limits proposed in this draft permit are protective of the Virginia Water Quality Standards and therefore, protect the threatened and endangered species found near the discharge. The project review report can be found in the permit reissuance file.

16. Antidegradation (9 VAC 25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 1 based on the fact the receiving water has a downstream impairment. Permit limits proposed have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development :

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points is equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLA) are calculated. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are the calculated on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

a) Effluent Screening:

Effluent data obtained from Attachment A and the permit application has been reviewed and determined to be suitable for evaluation. DMR results for the past three years are found in the reissuance file.

b) Mixing Zones and Wasteload Allocations (WLAs):

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o [Q_e + (f)(Q_s)] - [(C_s)(f)(Q_s)]}{Q_e}$$

Where:

WLA	=	Wasteload allocation
C _o	=	In-stream water quality criteria
Q _e	=	Design flow
f	=	Decimal fraction of critical flow from mixing evaluation
Q _s	=	Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
C _s	=	Mean background concentration of parameter in the receiving stream.

The Water Quality Standards contain two distinct mixing zone requirements. The first requirement is general in nature and requires the "use of mixing zone concepts in evaluating permit limits for acute and chronic standards in 9 VAC 25-260-140.B". The second requirement is specific and establishes special restrictions for regulatory mixing zones "established by the Board"

The Department of Environmental Quality uses a simplified mixing model to estimate the amount of mixing of a discharge with the receiving stream within specified acute and chronic exposure periods. The simplified model contains the following assumptions and approximations:

- The effluent enters the stream from the bank, either via a pipe, channel or ditch.
- The effluent velocity isn't significantly greater (no more than 1 - 2 ft/sec greater) than the stream velocity.
- The receiving stream is much wider than its depth (width at least ten times the depth).
- Diffusive mixing in the longitudinal direction (lengthwise) is insignificant compared with advective transport (flow).
- Complete vertical mixing occurs instantaneously at the discharge point. This is assumed since the stream depth is much smaller than the stream width.
- Lateral mixing (across the width) is a linear function of distance downstream.
- The effluent is neutrally buoyant (e.g. the effluent discharge temperature and salinity are not significantly different from the stream's ambient temperature and salinity).
- Complete mix is determined as the point downstream where the variation in concentration is 20% or less across the width and depth of the stream.
- The velocity of passing and drifting organisms is assumed equal to the stream velocity.

If it is suitably demonstrated that a reasonable potential for lethality or chronic impacts within the physical mixing area doesn't exist, then the basic complete mix equation, with 100% of the applicable stream flow, is appropriate. If the mixing analysis determines there is a potential for lethality or chronic impacts within the physical mixing area, then the proportion of stream flow that has mixed with the effluent over the allowed exposure time is used in the basic complete mix equation. As such, the wasteload allocation equation is modified to account for the decimal fraction of critical flow (f).

Staff derived wasteload allocations where parameters are reasonably expected to be present in an effluent (e.g., total residual chlorine where chlorine is used as a means of disinfection) and where effluent data indicate the pollutant is present in the discharge above quantifiable levels. With regard to the Outfall 001 discharge, DMR and Attachment A data indicate Copper is present in the discharge. At times, the stream is comprised entirely of effluent. It is staff's best professional opinion that the instream waste concentration is 100% during critical stream flows, and that the water quality of the stream will mirror the quality of the effluent. As such, Attachment 5a details the mixing analysis results and WLA derivations for this pollutant.

c) Effluent Limitations Toxic Pollutants, Outfall 001

9 VAC 25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9 VAC 25-31-230.D. requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Ammonia as N/TKN:

Ammonia is not a parameter of concern due to the fact the discharge is industrial in nature and there is no reasonable potential to exceed the ammonia criteria. Therefore, it is staff's best professional judgement that ammonia limits need not be developed for this discharge.

2) Total Residual Chlorine:

Staff calculated WLAs for TRC using current critical flows and the mixing allowance. In accordance with current DEQ guidance, staff used a default data point of 0.2 mg/L and the calculated WLAs to derive limits. A monthly average of 0.016 mg/L and a daily maximum limit of 0.016 mg/L are proposed for this discharge (see Attachment 6).

3) Metals/Organics:

During the previous reissuance of the permit, data analysis indicated the need for an average monthly copper limit of 5.52 µg/L. This limit was derived based on one datum point and it was staff's best professional judgement to implement a copper monitoring program in lieu of a limit. The monitoring program was instituted to compile additional data to assist in a later determination of whether a copper limit was warranted. Based on DMR monitoring data submitted from 2004 – 2006, it is staff's best professional judgement that a copper limit of 5.8 µg/L be implemented. Please see Attachment 5a for WLA and Attachment 7 for derivation of the limits.

d) Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

No changes to dissolved oxygen (D.O.), temperature and pH limitations are proposed. However, based on a review of DMR monitoring data from 2004 - 2006, temperature monitoring will now be conducted from May – October only. This six month period represents the time in which temperature limits are most warranted as demand for electricity is greater and days of operation at the facility increase. DMR monitoring data from 2004 - 2006 indicates the facility is consistently below the permitted temperature limit during the remaining months.

e) Effluent Limitations, Outfall 901 – Storm Water Only Pollutants

40 CFR Part 122.26 (b)(14) defines storm water discharges associated with an industrial activity. 40 CFR Part 122.26 (b)(14)(i) further defines categories of facilities considered to be engaging in industrial activity for the purposes of 40 CFR Part 122.26 (b)(14) as facilities subject to storm water effluent limitations, new source performance standards or toxic pollutant effluent standard under 40 CFR subchapter N.

In Form 2C Part III of the facility's application, the applicant has checked yes that an effluent limitation promulgated by EPA under Section 304 of the Clean Water Act does apply to the facility (steam electric). Additionally, in the application addendum the applicant has stated that discharges from Outfall 101 and Outfall 102 are classified as low volume waste sources.

Because discharge from Dominion – Gordonsville is addressed by New Source Performance Standards under Federal Effluent Guidelines established in 40 CFR Part 423.15 – Steam Electric Power Generating Point Source Category this discharge is subject to regulatory requirements for point source discharges of storm water.

VA-DEQ Guidance Memo 96-001 recommends that chemical water quality-based limits not be placed on storm water outfalls because the methodology for developing limits and the proper method of sampling is still a concern and under review by EPA. Therefore, in the interim, screening (i.e., decision) criteria have been established at 2 times the acute criteria. These criteria are applied solely to identify those pollutants that should be given special emphasis during development of the Storm Water Pollution Prevention Plan (SWPPP). Any storm water outfall data (pollutant specific) submitted by the permittee which are above the established monitoring end-points levels requires monitoring in Part I.A. of the permit for that specific outfall and pollutant. Derivation of the decision criteria and a comparison of the monitoring end-points and effluent data for this outfall are shown in Attachment 5b.

40 CFR Part 122.26 (c)(1)(i)(E)(1-3) requires quantitative data based on samples collected during storm events be analyzed for the following: any pollutant limited in an effluent guideline to which the facility is subject, any pollutant listed in the facility's NPDES permit for its process wastewater and oil and grease (O&G), pH, BOD₅, Chemical Oxygen Demand (COD), TSS, total phosphorous, total Kjeldahl nitrogen and nitrate plus nitrite. Additionally, total recoverable iron has an established monitoring cut-off concentration of 1.0 mg/L under Sector O (Steam Electric Generating Facilities) of the Multi Sector General Storm Water permit.

The current permit requires the permittee to monitor storm water annually for the following parameters: pH, COD, TSS, O&G and Total Recoverable Iron. Based on a review of storm water monitoring data from 2004 – 2006, monitoring for those parameters will continue with this reissuance. In addition, monitoring for total recoverable copper will be added based on the implementation of a copper limit at Outfall 001. Monitoring for Total Petroleum Hydrocarbons (TPH), which is monitored at Outfall 001, will not be included this with reissuance. Although the facility produces electricity through the combustion of petroleum based fuels and TPH is a more appropriate test for hydrocarbon contamination than O&G, O&G testing is required under the Federal Effluent Guidelines and therefore must remain in place. It is staff's best professional judgement that monitoring for BOD₅, total phosphorous, total Kjeldahl nitrogen and nitrate plus nitrite not be included as they are not parameters of concern due to the fact the facility is industrial in nature.

Should storm water data exceed the monitoring end point for copper (12 µg/l) the permittee shall reexamine the effectiveness of the SWPPP and any best management practices (BMPs) in use.

The facility is required by 40 CFR Part 122.26 (c)(1)(i)(E)(5 - 6) to provide flow measurements or estimate of the flow rate, and the total amount of discharge for the storm event sampled, and the method of flow measurement or estimation and the date and duration (in hours) of the storm event sampled, rainfall measurement or estimates of the storm event (in inches) which generated the sample runoff and the duration between the storm event sampled and the end of the previous measurable (greater than 0.1 inch of rainfall) storm event in hours.

During discussions with Dominion staff, it was discovered that in order to obtain storm water samples from Outfall 901 the facility must force a discharge. This discharge is comprised of storm water co-mingled with industrial wastewater. A discrete storm water discharge would only occur when the holding pond overflows due to a significant rain event. With this reissuance, Outfall 901 has been redesignated as an emergency storm water overflow with sampling to be conducted once per discharge from the holding pond. Visual examinations of storm water quality shall be conducted once per discharge from the holding pond rather than quarterly.

f) Effluent Limitations, Outfall 101 – Federal Effluent Guidelines

The discharge from this internal outfall is addressed by Federal Effluent Guidelines established in 40 CFR Part 423.15 – Steam Electric Power Generating Point Source Category. Outfall 101 is identified as a regulated outfall under the New Source Performance Standards due to the discharge of boiler blowdown. Boiler blowdown is defined in 40 CFR Part 423.11 of the Federal Effluent Guidelines as a low volume waste source. Therefore, those standards must apply. Low volume wastes, as previously defined by the facility, will be subject to concentration limits for Total Suspended Solids (TSS) and Oil and Grease (O&G) at Outfall 101. 40 CFR Part 423.15(m) states, "At the permitting authority's discretion, the quantity of pollutant allowed to be discharged may be expressed as a concentration limit instead of the mass based limitation specified in paragraphs (c) through (j) of this section. Concentration limits shall be based on the concentrations specified in this section". In addition, 40 CFR Part 423.15(n) states, "In the event that waste streams from various sources are combined for treatment or discharge, the quantity of each pollutant or pollutant property controlled in paragraphs (a) through (m) of this section attributable to each controlled waste source shall not exceed the specified limitation for that waste source". It is staff's best professional judgment that based on the level of treatment provided by the facility, 40 CFR Part 423.15(m) and 40 CFR Part 423.15(n) are applicable and shall be applied to address low volume wastes from the facility. Therefore, a TSS monthly average of 30 mg/l and an O&G monthly average of 15 mg/l shall be implemented at Outfall 101. Flow of this low volume waste source will continue to be monitored at this outfall.

g) Effluent Limitations, Outfall 102 – Federal Effluent Guidelines

The discharge from this internal outfall is addressed by Federal Effluent Guidelines established in 40 CFR Part 423.15 – Steam Electric Power Generating Point Source Category. Outfall 102 is identified as a regulated outfall under the New Source Performance Standards due to the discharge from the oil-water separator. The oil-water separator collects oily runoff from the fuel oil unloading area and turbine and gas generating areas. This discharge is defined in 40 CFR Part 423.11 of the Federal Effluent Guidelines as a low volume waste source.

source as it is not otherwise listed in the guidelines. Therefore, those standards must apply. Low volume wastes, as previously defined by the facility, will be subject to concentration limits for Total Suspended Solids (TSS) and Oil and Grease (O&G) at Outfall 102. 40 CFR Part 423.15(m) states, "At the permitting authority's discretion, the quantity of pollutant allowed to be discharged may be expressed as a concentration limit instead of the mass based limitation specified in paragraphs (c) through (j) of this section. Concentration limits shall be based on the concentrations specified in this section". In addition, 40 CFR Part 423.15(n) states, "In the event that waste streams from various sources are combined for treatment or discharge, the quantity of each pollutant or pollutant property controlled in paragraphs (a) through (m) of this section attributable to each controlled waste source shall not exceed the specified limitation for that waste source". It is staff's best professional judgment that based on the level of treatment provided by the facility, 40 CFR Part 423.15(m) and 40 CFR Part 423.15(n) are applicable and shall be applied to address low volume wastes from the facility. Therefore, a TSS monthly average of 30 mg/l and an O&G monthly average of 15 mg/l shall be implemented at Outfall 102. Flow of this low volume waste source will continue to be monitored at this outfall.

h) Effluent Limitations and Monitoring Summary

The effluent limitations are presented in the following tables. Limits were established for Total Suspended Solids, pH, Dissolved Oxygen, Total Residual Chlorine, Total Recoverable Copper, Temperature and Oil & Grease.

The limit for Dissolved Oxygen is based on best professional judgement and Guidance Memo 00-2011.

The limit for pH is set at the water quality criteria.

The limit for temperature is set at the water quality criteria.

The limit for Total Residual Chlorine is based on best professional judgement.

The limit for Total Suspended Solids is based on Federal Effluent Limit Guidelines.

The limit for Oil & Grease is based on Federal Effluent Limit Guidelines.

Sample Type and Frequency are in accordance with the recommendations in the VPDES Permit Manual.

18. Antibacksliding:

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

19. Effluent Limitations/Monitoring Requirements: Outfall 001

Average flow is 0.05 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	N/A	NL	N/A	N/A	NL	1/M	Estimate
pH	3	N/A	N/A	6.0 S.U.	9.0 S.U.	1/M	Grab
Temperature (May – October)	3	N/A	N/A	N/A	32 °C	1/M	IS
DO	3	N/A	N/A	5.0 mg/L	N/A	1/M	Grab
Total Residual Chlorine (after dechlorination)	2, 3	0.016 mg/L	0.016 mg/L	N/A	N/A	1/M	Grab
Hardness, Total (mg/L)	2	NL	NL	N/A	N/A	1/6M	Grab
Copper, Total Recoverable**, ****	2	5.8 µg/L	5.8 µg/L	N/A	N/A	1/3M	Grab
Total Petroleum Hydrocarbons (mg/L)*	2	NL	NL	N/A	N/A	1/6M	Grab
Acute Toxicity – <i>C. dubia</i> (TU _a)	2	N/A	N/A	N/A	NL	1/Y	5G/8HC
Acute Toxicity – <i>P. promelas</i> (TU _a)	2	N/A	N/A	N/A	NL	1/Y	5G/8HC

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgement
3. Water Quality Standards

MGD = Million gallons per day.

N/A = Not applicable.

NL = No limit; monitor and report.

S.U. = Standard units.

IS = Immersion stabilization.

1/M = Once every month.

1/3M = Once every three months.

1/6M = Once every six months.

1/Y = Once every twelve months.

5G/8HC = 5 Grab/Eight Hour Composite - Consisting of five (5) grab samples collected at hourly intervals until the discharge ceases or five (5) grab samples taken at equal time intervals for the duration of the discharge if the discharge is less than 8 hours in length.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

*Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW-141 (1995), or by EPA SW-846 Method 8015B (1996) for diesel range organics, or by EPA SW-846 Method 8270C (1998). If Method 8270C is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.

**The quarterly monitoring periods shall be January 1 - March 31, April 1 - June 30, July 1 - September 30 and October 1 - December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (April 10, July 10, October 10 and January 10, respectively).

***The semi-annual monitoring periods shall be January 1 – June 30 and July 1 – December 31. The DMR shall be submitted no later than the 10th day of the month following the monitoring period (July 10 and January 10, respectively).

****During the compliance period, there will be no limit only monitoring. Please see Fact Sheet Item #20.b. (Part I.C. of the permit) for the compliance schedule for this parameter.

19. Effluent Limitations/Monitoring Requirements: Outfall 101 (Boiler Blowdown)

Average flow is 0.013 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	N/A	NL	N/A	N/A	NL	1/M	Estimate
Total Suspended Solids	1	30 mg/L	100 mg/L	N/A	NL	1/M	Grab
Oil and Grease	1	15 mg/L	20 mg/L	N/A	NL	1/M	Grab

The basis for the limitations codes are:

1. Federal Effluent Requirements

MGD = Million gallons per day.

N/A = Not applicable.

NL = No limit; monitor and report.

1/M = Once every month.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

19. Effluent Limitations/Monitoring Requirements: Outfall 102 (Oil-Water Separator)

Average flow is 0.004 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	N/A	NL	N/A	N/A	NL	1/M	Estimate
Total Suspended Solids	1	30 mg/L	100 mg/L	N/A	NL	1/M	Grab
Oil and Grease	1	15 mg/L	20 mg/L	N/A	NL	1/M	Grab

The basis for the limitations codes are:

MGD = Million gallons per day.*1/M* = Once every month.

1. Federal Effluent Requirements

N/A = Not applicable.*NL* = No limit; monitor and report.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

19. Effluent Limitations/Monitoring Requirements: Outfall 901 (Emergency Storm Water Overflow)

Average flow varies dependent on precipitation.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency	Sample Type
Flow (Gallons)	N/A	NL	N/A	N/A	NL	1/Dis	Estimate
pH (S.U.)	2	N/A	N/A	NL	NL	1/Dis	Grab
Total Suspended Solids (mg/L)	1	N/A	N/A	N/A	NL	1/Dis	Grab
Oil and Grease (mg/L)	1	N/A	N/A	N/A	NL	1/Dis	Grab
Total Petroleum Hydrocarbons* (mg/L)	1	N/A	N/A	N/A	NL	1/Dis	Grab
Chemical Oxygen Demand (mg/L)	2	N/A	N/A	N/A	NL	1/Dis	Grab
Iron, Total Recoverable	2	N/A	N/A	N/A	NL	1/Dis	Grab
Copper, Total Recoverable	2	N/A	N/A	N/A	NL	1/Dis	Grab

The basis for the limitations codes are: *MGD* = Million gallons per day.*1/Dis*=Once each time a discharge occurs.

1. Federal Effluent Requirements

N/A = Not applicable.

2. Best Professional Judgement

NL = No limit; monitor and report.

Estimate = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

*Total Petroleum Hydrocarbons (TPH) shall be analyzed using the Wisconsin Department of Natural Resources Modified Diesel Range Organics Method as specified in Wisconsin publication SW-141 (1995), or by EPA SW-846 Method 8015B (1996) for diesel range organics, or by EPA SW-846 Method 8270C (1998). If Method 8270C is used, the lab must report the combination of diesel range organics and polynuclear aromatic hydrocarbons.

20. Other Permit Requirements :

- a) Part I.B. of the permit contains quantification levels and compliance reporting instructions.

9 VAC 25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9 VAC 25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

- b) Part I.C. of the permit details the requirements for a Schedule of Compliance.

The VPDES Permit Regulation, 9 VAC 25-31-250 allows use of Compliance Schedules to allow facilities sufficient time for upgrades to meet newly established effluent limits. The permit contains newly established limits for Total Recoverable Copper. Since the facility was not designed to meet these limits, a schedule of compliance is required to provide the permittee time for facility upgrade. The permittee shall achieve compliance with the final limits specified in Part I.A. of the VPDES permit in accordance with the following schedule as contained in Part I.C. of the permit:

The permittee shall submit to DEQ, NRO a report of progress on complying with the Total Recoverable Copper limit by July 10, 2008, January 10, 2009, July 10, 2009, January 10, 2010, and by July 10, 2010. The permittee shall achieve compliance with the Total Recoverable Copper limits specified in Part I.A of the permit by January 20, 2011.

- c) Permit Section Part I.D., details the requirements for Toxics Management Program.

The VPDES Permit Regulation at 9 VAC 25-31-210 requires monitoring and 9 VAC 25-31-220.I, requires limitations in the permit to provide for and assure compliance with all applicable requirements of the State Water Control Law and the Clean Water Act. A TMP is imposed for municipal facilities with a design rate >1.0 MGD, with an approved pretreatment program or required to develop a pretreatment program, or those determined by the Board based on effluent variability, compliance history, IWC, and receiving stream characteristics. See Attachment 8 for a derivation of end points.

During the previous reissuance, both acute and chronic testing was to be conducted under wet and dry conditions. Wet weather testing was implemented to determine the toxicity of storm water runoff entering the holding pond. Dry weather testing was implemented to determine the toxicity of process wastewater prior to discharge. Concerns associated with wet/dry weather and toxicity have not been noted. Therefore, the requirement to conduct toxicity testing during wet and dry weather has been removed from this permit reissuance. Because the discharge from this facility is intermittent in nature and is highly dependent on rainfall and the variability of days and hours of operation, only acute criteria will be determined.

- d) Permit Section Part I.E. details the requirements of a Storm Water Management Plan.

9 VAC 25-31-10 defines discharges of storm water from municipal treatment plants with design flow of 1.0 MGD or more, or plants with approved pretreatment programs, as discharges of storm water associated with industrial activity. 9 VAC 25-31-120 requires a permit for these discharges. In addition, 40 CFR Part 122.26 (b)(14) defines storm water discharge associated with an industrial activity. 40 CFR Part 122.26 (b)(14)(i) further defines categories of facilities considered to be engaging in industrial activity for the purposes of 40 CFR Part 122.26 (b)(14) as facilities subject to storm water effluent limitations, new source performance standards or toxic pollutant effluent standard under 40 CFR subchapter N. Because discharge from Dominion – Gordonsville is addressed by New Source Performance Standards under Federal Effluent Guidelines established in 40 CFR Part 423.15 – Steam Electric Power Generating Point Source Category this discharge is subject to regulatory requirements for point source discharges of storm water. See Part 17.e for further discussion.

The pollution Prevention Plan requirements are derived from the VPDES general permit for discharges of storm water associated with industrial activity, 9 VAC 25-151-10 et seq.

21. Other Special Conditions :

- a) O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790; VPDES Permit Regulation, 9 VAC 25-31-190.E. The permittee shall submit a statement confirming the accuracy and completeness of the current O&M Manual to the Department of Environmental Quality, Northern Virginia Regional Office (DEQ-NVRO) by December 2007. Future changes to the facility must be addressed by the submittal of a revised O&M Manual within 90 days of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.
- b) Water Quality Criteria Reopener. The VPDES Permit Regulation at 9 VAC 25-31-220 D. requires establishment of effluent limitations to ensure attainment/maintenance of receiving stream water quality criteria. Should data collected and submitted for Attachment A of the permit, indicate the need for limits to ensure protection of water quality criteria, the permit may be modified or alternately revoked and reissued to impose such water quality-based limitations.
- c) Water Quality Criteria Monitoring. State Water Control Law §62.1-44.21 authorizes the Board to request information needed to determine the discharge's impact on State waters. States are required to review data on discharges to identify actual or potential toxicity problems, or the attainment of water quality goals, according to 40 CFR Part 131, Water Quality Standards, subpart 131.11. To ensure that water quality criteria are maintained, the permittee is required to analyze the facility's effluent for the substances noted in Attachment A of this VPDES permit.
- d) Notification Levels. The permittee shall notify the Department as soon as they know or have reason to believe:
 - a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following notification levels:
 - (1) One hundred micrograms per liter;
 - (2) Two hundred micrograms per liter for acrolein and acrylonitrile; five hundred micrograms per liter for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter for antimony;
 - (3) Five times the maximum concentration value reported for that pollutant in the permit application; or
 - (4) The level established by the Board.
 - b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following notification levels:
 - (1) Five hundred micrograms per liter;
 - (2) One milligram per liter for antimony;
 - (3) Ten times the maximum concentration value reported for that pollutant in the permit application; or
 - (4) The level established by the Board.
- e) Prohibition of Chemical Additives. Chemical additives may not be used in the non-contact cooling water without prior notification to the Department of Environmental Quality, Northern Regional Office (DEQ-NVRO). The chemical additives may be toxic or otherwise violates the receiving stream water quality standards. Upon notification, the Regional Office will determine if this activity warrants a modification of the permit.
- f) Polychlorinated Biphenyl. 40 CFR 423.12(b)(2) requires that there shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid from this facility.

- g) Materials Handling/Storage. 9 VAC 25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia §62.1-44.16 and §62.1-44.17 authorize the Board to regulate the discharge of industrial waste or other waste.

Permit Section Part II. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

23. Changes to the Permit from the Previously Issued Permit:

a) Special Conditions:

- 1) A TMDL reopener has been added to the permit.

b) Monitoring and Effluent Limitations:

- 1) The monitoring frequency for flow, pH, temperature, DO and TRC for Outfall 001 has been reduced from twice per month to once per month based on the compliance history of the facility.
- 2) Monitoring for temperature will take place between May – October only as this represents the period of time in which temperature limits are most warranted as demand for electricity is greater and days of operation at the facility increase.
- 3) A copper limit of 5.8 µg/L has been established for Outfall 001.
- 4) A three year schedule of compliance has been established for Outfall 001 based on the new copper limit.
- 5) The monitoring frequency for copper for Outfall 001 has been increased from once per six months to once per quarter based on the establishment of a copper limit at this outfall.
- 6) Chronic toxicity testing has been removed from Outfall 001 as the discharge from this facility is intermittent in nature.
- 7) Toxicity sampling protocol has been changed from a 24-HC to 5G-8HC to yield a more representative sample of the discharge in either wet or dry flow periods.
- 8) The toxicity sampling requirement for wet and dry weather conditions has been removed as no problems have been noted. Annual acute testing remains in place.
- 9) The monitoring frequency for all parameters associated with Outfall 101 has been reduced from twice per month to once per month based on the compliance history of the facility.
- 10) The monitoring frequency for all parameters associated with Outfall 102 has been reduced from twice per month to once per month based on the compliance history of the facility.
- 11) Monitoring for total recoverable copper has been added to Outfall 901 due to the establishment of a copper limit at Outfall 001 and the requirements of 40 CFR Part 122.26 (c)(1)(i)(E)(2).
- 12) Outfall 901 has been redesignated as an emergency storm water overflow and shall be sampled contingent upon an emergency release.
- 13) Quarterly visual monitoring of storm water associated with Outfall 901 shall now be conducted contingent upon an emergency release rather than quarterly.

24. Variances/Alternate Limits or Conditions:

None.

25. Public Notice Information:

First Public Notice Date: December 27, 2007

Second Public Notice Date: January 3, 2008

Public Notice Information is required by 9 VAC 25-31-280 B. All pertinent information is on file and may be inspected, and copied by contacting the: Northern Virginia DEQ Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3853, sdmackert@deq.virginia.gov. See Attachment 9 for a copy of the public notice document.

MEMORANDUM

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY NORTHERN VIRGINIA REGIONAL OFFICE

13901 Crown Court

Woodbridge, VA 22193

SUBJECT: Flow Frequency Determination
Dominion – Gordonsville (VA0087033)

TO: Permit Re-issuance File

FROM: Susan Mackert

DATE: December 4, 2007

This memo supersedes the October 30, 1996 memo from Paul Herman concerning the subject VPDES permit.

Dominion - Gordonsville discharges to the South Anna River near Gordonsville, Virginia. Stream flow frequencies are required at this site for use in developing effluent limitations for the VPDES permit.

Based on discussions with the Dominion, Dominion believes that the watershed of the South Anna River upstream of Outfall 001 is approximately 6.1 square miles rather than the 5.0 square miles as presented in the original flow frequency determination. The 6.1 square miles is based on calculations and observations of the USGS topographic map for the area. Updated flow frequencies for the discharge point are presented below. The values at the discharge point were determined by drainage area proportions and do not address any withdrawals, discharges or springs lying between the gage and the outfall.

Contrary Creek near Mineral, VA (#01670300):

Drainage Area = 5.53 mi²

1Q10 = 0.04 cfs
7Q10 = 0.05 cfs
30Q5 = 0.21 cfs

High Flow 1Q10 = 0.64 cfs
High Flow 7Q10 = 0.79 cfs
Harmonic Mean = 0.90 cfs

South Anna River at Measurement Site (#01671200):

Drainage Area = 6.1 mi²

1Q10 = 0.04 cfs (0.03 MGD)
7Q10 = 0.05 cfs (0.04 MGD)
30Q5 = 0.21 cfs (0.15 MGD)

High Flow 1Q10 = 0.64 cfs (0.46 MGD)
High Flow 7Q10 = 0.79 cfs (0.56 MGD)
Harmonic Mean = 0.90 cfs (0.99 MGD)

The high flow months are November through April.

NPDES PERMIT RATING WORK SHEET

VA0087033

VPDES NO. : VA0087033

- ☒ Regular Addition
☐ Discretionary Addition
☐ Score change, but no status Change
☐ Deletion

Facility Name: Dominion - Gordonsville

City / County: Gordonsville / Louisa County

Receiving Water: South Anna River

Reach Number:

Is this facility a steam electric power plant (sic =4911) with one or more of the following characteristics?

1. Power output 500 MW or greater (not using a cooling pond/lake)

2. A nuclear power Plant

3. Cooling water discharge greater than 25% of the receiving stream's 7Q10 flow rate

☐ Yes; score is 600 (stop here) ☒ NO; (continue)

Is this permit for a municipal separate storm sewer serving a population greater than 100,000?

☐ YES; score is 700 (stop here)☒ NO; (continue)**FACTOR 1: Toxic Pollutant Potential**

PCS SIC Code: Primary Sic Code: 4911 Other Sic Codes:

Industrial Subcategory Code: 000 (Code 000 if no subcategory)

Determine the Toxicity potential from Appendix A. Be sure to use the TOTAL toxicity potential column and check one)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
<input type="checkbox"/> No process waste streams	0	0	<input type="checkbox"/> 3.	3	15	<input type="checkbox"/> 7.	7	35
<input type="checkbox"/> 1.	1	5	<input type="checkbox"/> 4.	4	20	<input type="checkbox"/> 8.	8	40
<input type="checkbox"/> 2.	2	10	<input type="checkbox"/> 5.	5	25	<input type="checkbox"/> 9.	9	45
			<input checked="" type="checkbox"/> 6.	6	30	<input type="checkbox"/> 10.	10	50

Code Number Checked: 6

Total Points Factor 1: 30

FACTOR 2: Flow/Stream Flow Volume (Complete either Section A or Section B; check only one)**Section A – Wastewater Flow Only considered**

Wastewater Type (see Instructions)	Code	Points
Type I: Flow < 5 MGD	<input type="checkbox"/> 11	0
Flow 5 to 10 MGD	<input type="checkbox"/> 12	10
Flow > 10 to 50 MGD	<input type="checkbox"/> 13	20
Flow > 50 MGD	<input type="checkbox"/> 14	30
Type II: Flow < 1 MGD	<input type="checkbox"/> 21	10
Flow 1 to 5 MGD	<input type="checkbox"/> 22	20
Flow > 5 to 10 MGD	<input type="checkbox"/> 23	30
Flow > 10 MGD	<input type="checkbox"/> 24	50
Type III: Flow < 1 MGD	<input type="checkbox"/> 31	0
Flow 1 to 5 MGD	<input type="checkbox"/> 32	10
Flow > 5 to 10 MGD	<input type="checkbox"/> 33	20
Flow > 10 MGD	<input type="checkbox"/> 34	30

Section B – Wastewater and Stream Flow Considered

Wastewater Type (see Instructions)	Percent of Instream Wastewater Concentration at Receiving Stream Low Flow	Code	Points
Type I/III:	< 10 %	<input type="checkbox"/> 41	0
	10 % to < 50 %	<input type="checkbox"/> 42	10
	> 50 %	<input type="checkbox"/> 43	20
Type II:	< 10 %	<input type="checkbox"/> 51	0
	10 % to < 50 %	<input type="checkbox"/> 52	20
	> 50 %	<input checked="" type="checkbox"/> 53	30

Code Checked from Section A or B: 53

Total Points Factor 2: 30

NPDES PERMIT RATING WORK SHEET

VA0087033

FACTOR 3: Conventional Pollutants

(only when limited by the permit)

A. Oxygen Demanding Pollutants: (check one)

☐ BOD☐ COD☐ Other: _____

Permit Limits: (check one)

- ☐ < 100 lbs/day
☐ 100 to 1000 lbs/day
☐ > 1000 to 3000 lbs/day
☐ > 3000 lbs/day

Code	Points
1	0
2	5
3	15
4	20

Code Number Checked: N/APoints Scored: 0

B. Total Suspended Solids (TSS)

Permit Limits: (check one)

- ☒ < 100 lbs/day
☐ 100 to 1000 lbs/day
☐ > 1000 to 5000 lbs/day
☐ > 5000 lbs/day

Code	Points
1	0
2	5
3	15
4	20

Code Number Checked: 1Points Scored: 0

C. Nitrogen Pollutants: (check one)

☐ Ammonia☐ Other: _____

Permit Limits: (check one)

- Nitrogen Equivalent**
☐ < 300 lbs/day
☐ 300 to 1000 lbs/day
☐ > 1000 to 3000 lbs/day
☐ > 3000 lbs/day

Code	Points
1	0
2	5
3	15
4	20

Code Number Checked: N/APoints Scored: 0Total Points Factor 3: 0**FACTOR 4: Public Health Impact**

Is there a public drinking water supply located within 50 miles downstream of the effluent discharge (this include any body of water to which the receiving water is a tributary)? A public drinking water supply may include infiltration galleries, or other methods of conveyance that ultimately get water from the above reference supply.

☒ YES; (If yes, check toxicity potential number below) – Assumed: public drinking water supply within 50 miles downstream

☐ NO; (If no, go to Factor 5)

Determine the Human Health potential from Appendix A. Use the same SIC doe and subcategory reference as in Factor 1. (Be sure to use the Human Health toxicity group column – check one below)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
<input type="checkbox"/> No process waste streams	0	0	<input type="checkbox"/> 3.	3	0	<input type="checkbox"/> 7.	7	15
<input type="checkbox"/> 1.	1	0	<input type="checkbox"/> 4.	4	0	<input type="checkbox"/> 8.	8	20
<input type="checkbox"/> 2.	2	0	<input type="checkbox"/> 5.	5	5	<input type="checkbox"/> 9.	9	25
			<input checked="" type="checkbox"/> 6.	6	10	<input type="checkbox"/> 10.	10	30

Code Number Checked: 6Total Points Factor 4: 10

NPDES PERMIT RATING WORK SHEET

FACTOR 5: Water Quality Factors

- A. Is (or will) one or more of the effluent discharge limits based on water quality factors of the receiving stream (rather than technology-base federal effluent guidelines, or technology-base state effluent guidelines), or has a wasteload allocation been to the discharge

	Code	Points
<input type="checkbox"/> YES	1	10
<input checked="" type="checkbox"/> NO	2	0

- B. Is the receiving water in compliance with applicable water quality standards for pollutants that are water quality limited in the permit?

	Code	Points
<input checked="" type="checkbox"/> YES	1	0
<input type="checkbox"/> NO	2	5

- C. Does the effluent discharged from this facility exhibit the reasonable potential to violate water quality standards due to whole effluent toxicity?

	Code	Points
<input type="checkbox"/> YES	1	10
<input checked="" type="checkbox"/> NO	2	0

Code Number Checked:

Points Factor 5:

$$A \frac{2}{0} + B \frac{1}{0} + C \frac{2}{0} = 0$$

FACTOR 6: Proximity to Near Coastal Waters

- A. Base Score: Enter flow code here (from factor 2) 53

Check appropriate facility HPRI code (from PCS):

HPRI#	Code	HPRI Score
<input type="checkbox"/> 1	1	20
<input type="checkbox"/> 2	2	0
<input type="checkbox"/> 3	3	30
<input checked="" type="checkbox"/> 4	4	0
<input type="checkbox"/> 5	5	20

HPRI code checked: 4Base Score (HPRI Score): 0

X

(Multiplication Factor)

0.6

=

0

Enter the multiplication factor that corresponds to the flow code:

Flow Code	Multiplication Factor
11, 31, or 41	0.00
12, 32, or 42	0.05
13, 33, or 43	0.10
14 or 34	0.15
21 or 51	0.10
22 or 52	0.30
23 or 53	0.60
24	1.00

- B. Additional Points – NEP Program

For a facility that has an HPRI code of 3, does the facility discharge to one of the estuaries enrolled in the National Estuary Protection (NEP) program (see instructions) or the Chesapeake Bay?

Code	Points
<input type="checkbox"/> 1	10
<input checked="" type="checkbox"/> 2	0

Code Number Checked:

Points Factor 6:

$$A \frac{4}{0} + B \frac{2}{0} + C \frac{2}{0} = 0$$

- C. Additional Points – Great Lakes Area of Concern

For a facility that has an HPRI code of 5, does the facility discharge any of the pollutants of concern into one of the Great Lakes' 31 area's of concern (see instructions)?

Code	Points
<input type="checkbox"/> 1	10
<input checked="" type="checkbox"/> 2	0

NPDES PERMIT RATING WORK SHEET

SCORE SUMMARY

<u>Factor</u>	<u>Description</u>	<u>Total Points</u>
1	Toxic Pollutant Potential	30
2	Flows / Streamflow Volume	30
3	Conventional Pollutants	0
4	Public Health Impacts	10
5	Water Quality Factors	0
6	Proximity to Near Coastal Waters	0
TOTAL (Factors 1 through 6)		70

S1. Is the total score equal to or greater than 80 ☐ YES; (Facility is a Major) ☒ NO

S2. If the answer to the above questions is no, would you like this facility to be discretionary major?

☒ NO

☐ YES; (Add 500 points to the above score and provide reason below:

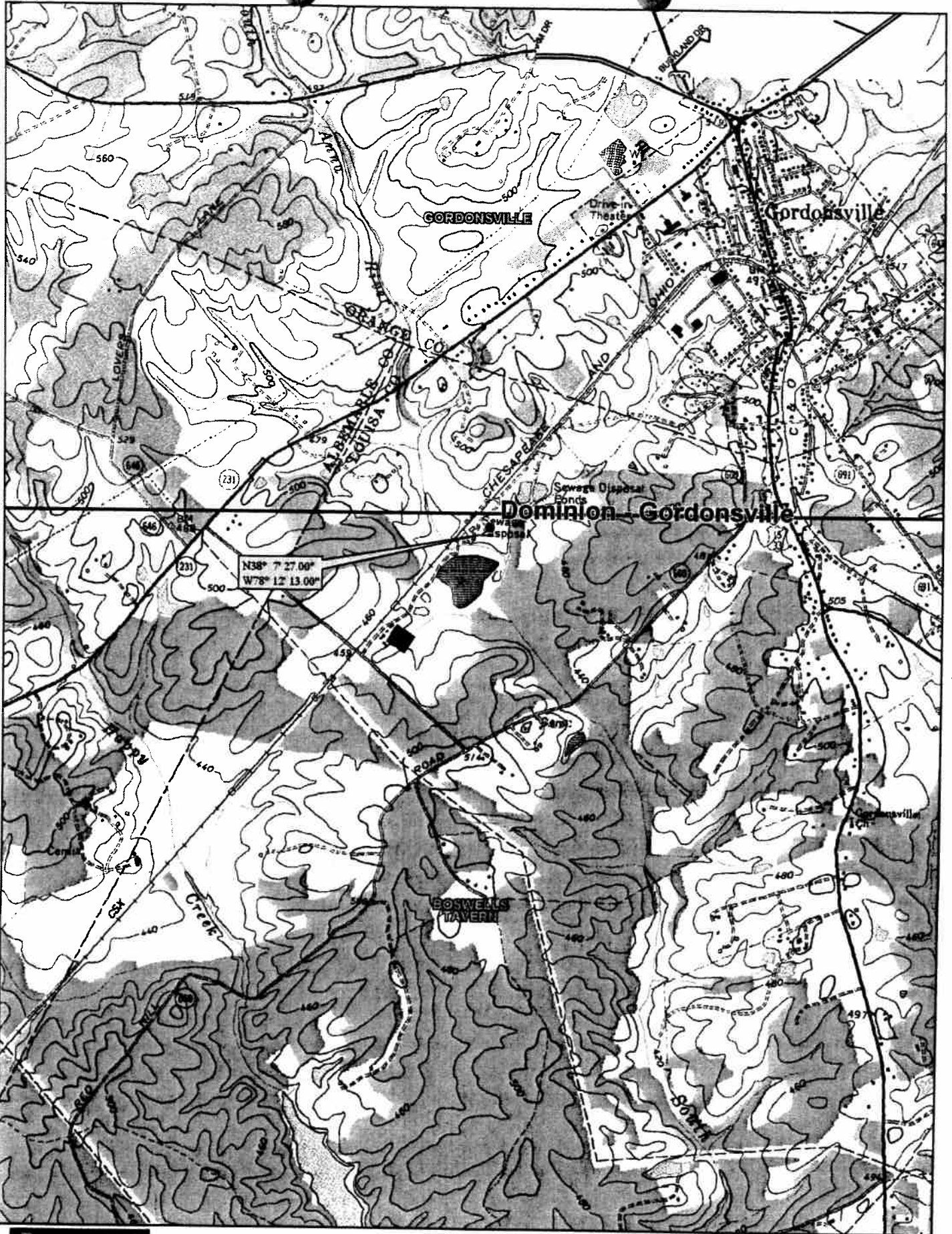
Reason:

NEW SCORE : 70
OLD SCORE : 570

Permit Reviewer's Name : Susan Mackert

Phone Number: (703) 583-3853

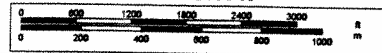
Date: July 9, 2007



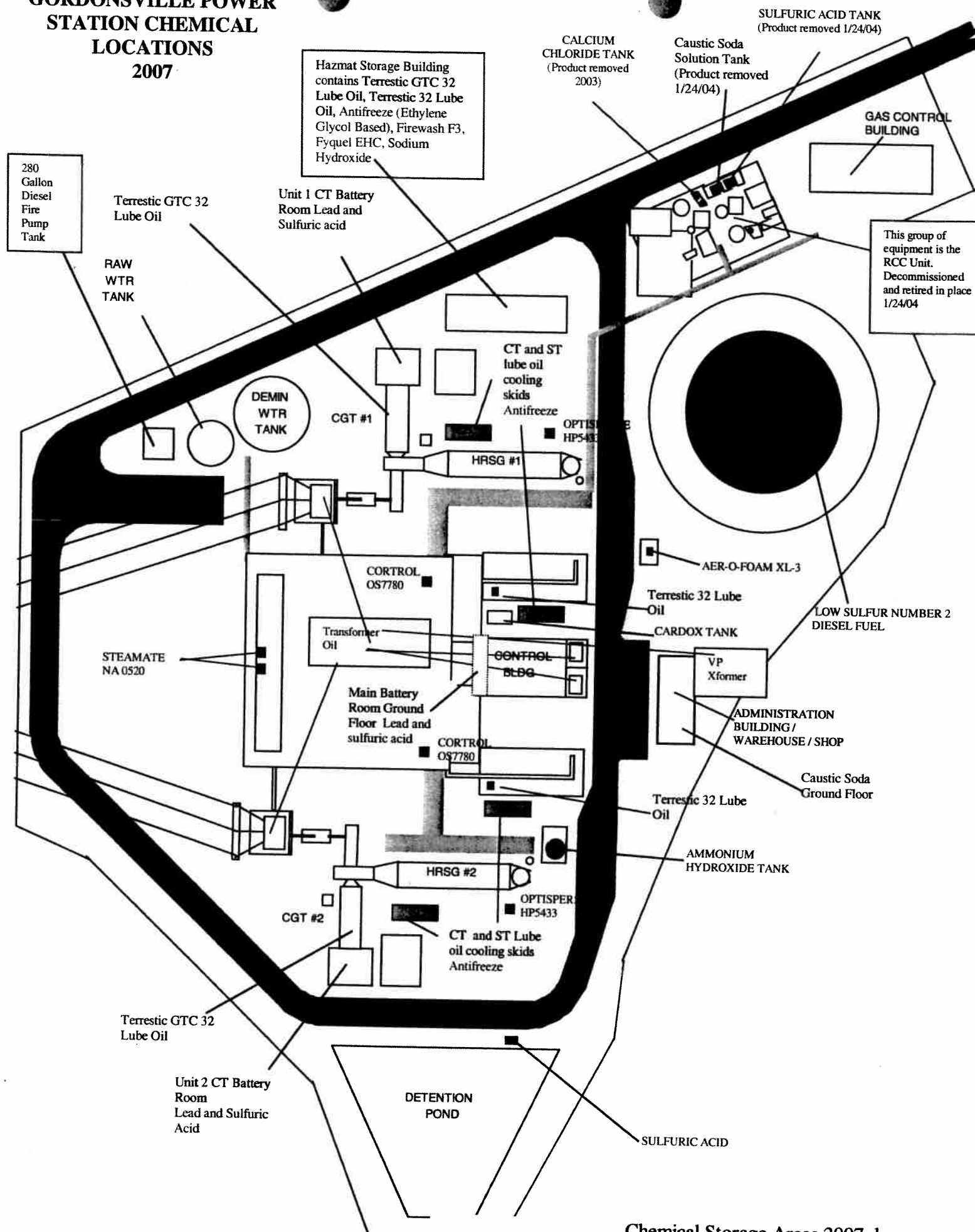
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Scale 1 : 25,000
1" = 2080 ft



GORDONSVILLE POWER STATION CHEMICAL LOCATIONS 2007



BULK CHEMICAL LIST FOR 2007 GORDONSVILLE POWER STATION VPDES PERMIT RENEWAL APPLICATION

Commercial or Generic Name of Chemical	Maximum Storage Capacity (lbs)
Aer-O-Foam XL-3	10,908
Ammonium Hydroxide Solutions	146,351
Antifreeze, ethylene glycol based	18,026
Betz Cortrol OS7780	3160
Betz Optisperse HP5433	6600
Betz Steamate NA 0520	4867
Carbon Dioxide	102,240
Caustic Soda	191
Fire Wash F3 Eyewash	1830
Fyquel ST Hydraulic Oil	825
No. 2 Fuel Oil	328,624,634
Sodium Hydroxide 50%	16,406
Sulfuric Acid	976
Transformer Oil	247,717
Turbine Lube Oil (Teresstic 32)	28,210
Turbine Lube Oil (Teresstic GTC 32)	38,150

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Dominion - Gordonsville
Receiving Stream: South Anna River

Permit No.: VA0087033

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information		Stream Flows		Mixing Information		Effluent Information	
Mean Hardness (as CaCO3) =	mg/L	1Q10 (Annual) =	0.03 MGD	Annual - 1Q10 Mix =	100 %	Mean Hardness (as CaCO3) =	30 mg/L
90% Temperature (Annual) =	deg C	7Q10 (Annual) =	0.04 MGD	- 7Q10 Mix =	100 %	90% Temp (Annual) =	31 deg C
90% Temperature (Wet season) =	deg C	30Q10 (Annual) =	0 MGD	- 30Q10 Mix =	100 %	90% Temp (Wet season) =	deg C
90% Maximum pH =	SU	1Q10 (Wet season) =	0.46 MGD	Wet Season - 1Q10 Mix =	100 %	90% Maximum pH =	8.7 SU
10% Maximum pH =	SU	30Q10 (Wet season) =	0 MGD	- 30Q10 Mix =	100 %	10% Maximum pH =	SU
Tier Designation (1 or 2) =	1	30Q5 =	0.15 MGD			Discharge Flow =	0.05 MGD
Public Water Supply (PWS) Y/N? =	n	Harmonic Mean =	0 MGD				
Trout Present Y/N? =	n	Annual Average =	0 MGD				
Early Life Stages Present Y/N? =	y						

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	Acute	Chronic	HH (PWS)	Acute	Chronic	HH (PWS)	Acute	Chronic	HH (PWS)	Acute	Chronic	HH (PWS)
Acenaphthene	0	-	-	na	-	-	na	-	-	-	-	-	-	-	-	na
Acrolein	0	-	-	na	-	-	na	-	-	-	-	-	-	-	-	na
Acrylonitrile ^c	0	-	-	na	-	-	na	-	-	-	-	-	-	-	-	na
Aldrin ^c	0	-	-	na	-	-	na	-	-	-	-	-	-	-	-	na
Ammonia-N (mg/l)	0	3.0E+00	-	na	4.8E+00	-	na	-	-	-	-	-	-	-	-	na
(Yearly)	0	5.84E+01	2.69E-01	na	-	-	na	-	-	-	-	-	-	-	-	na
Ammonia-N (mg/l)	0	5.84E+01	7.78E-01	na	-	-	na	-	-	-	-	-	-	-	-	na
(High Flow)	0	-	-	na	-	-	na	-	-	-	-	-	-	-	-	na
Anthracene	0	-	-	na	-	-	na	-	-	-	-	-	-	-	-	na
Antimony	0	-	-	na	-	-	na	-	-	-	-	-	-	-	-	na
Arsenic	0	-	-	na	-	-	na	-	-	-	-	-	-	-	-	na
Barium	0	3.4E+02	1.5E+02	na	-	-	na	-	-	-	-	-	-	-	-	na
Benzene ^c	0	-	-	na	-	-	na	-	-	-	-	-	-	-	-	na
Benzidine ^c	0	-	-	na	-	-	na	-	-	-	-	-	-	-	-	na
Benzo (a) anthracene ^c	0	-	-	na	-	-	na	-	-	-	-	-	-	-	-	na
Benzo (b) fluoranthene ^c	0	-	-	na	-	-	na	-	-	-	-	-	-	-	-	na
Benzo (k) fluoranthene ^c	0	-	-	na	-	-	na	-	-	-	-	-	-	-	-	na
Benzo (a) pyrene ^c	0	-	-	na	-	-	na	-	-	-	-	-	-	-	-	na
Bis(2-Chloroethyl) Ether	0	-	-	na	-	-	na	-	-	-	-	-	-	-	-	na
Bis(2-Chloroisopropyl) Ether	0	-	-	na	-	-	na	-	-	-	-	-	-	-	-	na
Bromoform ^c	0	-	-	na	-	-	na	-	-	-	-	-	-	-	-	na
Butylbenzylphthalate	0	-	-	na	-	-	na	-	-	-	-	-	-	-	-	na
Cadmium	0	-	-	na	-	-	na	-	-	-	-	-	-	-	-	na
Carbon Tetrachloride ^c	0	8.2E-01	3.8E-01	na	-	-	na	-	-	-	-	-	-	-	-	na
Chlordane ^c	0	-	-	na	-	-	na	-	-	-	-	-	-	-	-	na
Chlordane ^c	0	-	-	na	-	-	na	-	-	-	-	-	-	-	-	na
Chlordane ^c	0	2.4E+00	4.3E-03	na	-	-	na	-	-	-	-	-	-	-	-	na
Chlordane ^c	0	8.8E+05	2.3E+05	na	-	-	na	-	-	-	-	-	-	-	-	na
Chlordane ^c	0	1.9E+01	1.1E+01	na	-	-	na	-	-	-	-	-	-	-	-	na
Chlorobenzene	0	-	-	na	-	-	na	-	-	-	-	-	-	-	-	na

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	Acute	Chronic	HH (PWS)	Acute	Chronic	HH (PWS)	Acute	Chronic	HH (PWS)	Acute	Chronic	HH (PWS)
Chlorodibromomethane ^c	0	-	-	na	3.4E+02	-	na	-	-	-	-	-	-	-	na	3.4E+02
Chloroform ^c	0	-	-	na	2.9E+04	-	na	-	-	-	-	-	-	-	na	2.9E+04
2-Chloronaphthalene	0	-	-	na	4.3E+03	-	na	-	-	-	-	-	-	-	na	1.7E+04
2-Chlorophenol	0	-	-	na	4.0E+02	-	na	-	-	-	-	-	-	-	na	1.6E+03
Chlorpyrifos	0	8.3E-02	4.1E-02	na	-	1.3E-01	7.4E-02	-	-	-	-	-	-	1.3E-01	7.4E-02	na
Chromium III	0	1.8E-02	2.4E-01	na	-	2.9E+02	4.3E+01	-	-	-	-	-	-	2.9E+02	4.3E+01	na
Chromium VI	0	1.6E+01	1.1E-01	na	-	2.6E+01	2.0E+01	-	-	-	-	-	-	2.6E+01	2.0E+01	na
Chromium, Total	0	-	-	na	-	-	-	-	-	-	-	-	-	-	-	-
Chrysene ^c	0	-	-	na	4.9E-01	-	na	-	-	-	-	-	-	-	na	4.9E-01
Copper	0	3.6E+00	2.7E+00	na	-	5.8E+00	4.9E+00	-	-	-	-	-	-	5.8E+00	4.9E+00	na
Cyanide	0	2.2E+01	5.2E+00	na	2.2E+05	3.5E+01	9.4E+00	-	-	-	-	-	-	3.5E+01	9.4E+00	na
DDD ^c	0	-	-	na	8.4E-03	-	na	-	-	-	-	-	-	-	na	8.4E-03
DDE ^c	0	-	-	na	5.9E-03	-	na	-	-	-	-	-	-	-	na	5.9E-03
DDT ^c	0	1.1E+00	1.0E-03	na	5.9E-03	1.8E+00	1.8E-03	-	-	-	-	-	-	1.8E+00	1.8E-03	na
Denitron	0	-	1.0E-01	na	-	-	1.8E-01	-	-	-	-	-	-	-	na	1.8E-01
Dibenz(a,h)anthracene ^c	0	-	-	na	4.9E-01	-	na	-	-	-	-	-	-	-	na	4.9E-01
Dibutyl phthalate	0	-	-	na	1.2E+04	-	na	-	-	-	-	-	-	-	na	4.8E+04
Dichloromethane	0	-	-	na	1.6E+04	-	na	-	-	-	-	-	-	-	na	1.6E+04
(Methylene Chloride) ^c	0	-	-	na	1.7E+04	-	na	-	-	-	-	-	-	-	na	1.6E+04
1,2-Dichlorobenzene	0	-	-	na	2.6E+03	-	na	-	-	-	-	-	-	-	na	6.8E+04
1,3-Dichlorobenzene	0	-	-	na	2.6E+03	-	na	-	-	-	-	-	-	-	na	1.0E+04
1,4-Dichlorobenzene	0	-	-	na	2.6E+03	-	na	-	-	-	-	-	-	-	na	1.0E+04
3,3-Dichlorobenzidine ^c	0	-	-	na	7.7E-01	-	na	-	-	-	-	-	-	-	na	1.0E+04
Dichlorobromomethane ^c	0	-	-	na	4.6E-02	-	na	-	-	-	-	-	-	-	na	7.7E-01
1,2-Dichloroethane ^c	0	-	-	na	9.9E+02	-	na	-	-	-	-	-	-	-	na	4.6E+02
1,1-Dichloroethylene	0	-	-	na	1.7E+04	-	na	-	-	-	-	-	-	-	na	9.9E+02
1,2-trans-dichloroethylene	0	-	-	na	1.4E+05	-	na	-	-	-	-	-	-	-	na	6.8E+04
2,4-Dichlorophenol	0	-	-	na	7.9E+02	-	na	-	-	-	-	-	-	-	na	5.6E+05
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	-	-	na	-	-	-	-	-	-	-	-	-	-	na	3.2E+03
1,2-Dichloropropane ^c	0	-	-	na	-	-	-	-	-	-	-	-	-	-	na	-
1,3-Dichloropropene	0	-	-	na	3.9E+02	-	na	-	-	-	-	-	-	-	na	3.9E+02
Dieldrin ^c	0	2.4E-01	5.6E-02	na	1.4E-03	3.8E-01	1.0E-01	-	-	-	-	-	-	-	na	6.8E+03
Diethyl Phthalate	0	-	-	na	1.2E+05	-	na	-	-	-	-	-	-	-	na	1.4E-03
Di-2-Ethylhexyl Phthalate ^c	0	-	-	na	5.9E+01	-	na	-	-	-	-	-	-	-	na	4.8E+05
2,4-Dimethylphenol	0	-	-	na	2.3E+03	-	na	-	-	-	-	-	-	-	na	5.9E+01
Dimethyl Phthalate	0	-	-	na	2.9E+06	-	na	-	-	-	-	-	-	-	na	9.2E+03
Di-n-Butyl Phthalate	0	-	-	na	1.2E+04	-	na	-	-	-	-	-	-	-	na	1.2E+07
2,4 Dinitrophenol	0	-	-	na	1.4E+04	-	na	-	-	-	-	-	-	-	na	4.8E+04
2-Methyl-4,6-Dinitrophenol	0	-	-	na	7.6E+02	-	na	-	-	-	-	-	-	-	na	5.6E+04
2,4-Dinitrotoluene ^c	0	-	-	na	9.1E-01	-	na	-	-	-	-	-	-	-	na	3.1E+03
1,2,3,4,5-Pentachlorobenzene ^c	0	-	-	na	-	-	-	-	-	-	-	-	-	-	na	9.1E+01
1,2-Diphenylhydrazine ^c	0	-	-	na	1.2E-06	-	na	-	-	-	-	-	-	-	na	na
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	3.5E-01	1.0E-01	-	-	-	-	-	-	-	na	5.4E+00
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	3.5E-01	1.0E-01	-	-	-	-	-	-	3.5E-01	1.0E-01	na
Endosulfan Sulfate	0	-	-	na	2.4E+02	-	na	-	-	-	-	-	-	3.5E-01	1.0E-01	na
Endrin	0	8.6E-02	3.6E-02	na	8.1E-01	1.4E-01	6.5E-02	-	-	-	-	-	-	-	na	9.6E+02
Endrin Aldehyde	0	-	-	na	8.1E-01	-	na	-	-	-	-	-	-	1.4E-01	6.5E-02	na
														-	na	3.2E+00

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)
Ethylbenzene	0	-	-	na	2.9E+04	-	-	na	1.2E+05	-	-	-	-	-	-	na
Fluoranthene	0	-	-	na	3.7E+02	-	-	na	1.5E+03	-	-	-	-	-	-	na
Fluorene	0	-	-	na	1.4E+04	-	-	na	5.6E+04	-	-	-	-	-	-	na
Foaming Agents	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	na
Guthion	0	-	1.0E-02	na	-	-	1.8E-02	na	-	-	-	-	-	-	-	na
Heptachlor ^c	0	5.2E-01	3.8E-03	na	2.1E-03	8.3E-01	6.8E-03	na	2.1E-03	-	-	-	-	-	1.8E-02	na
Heptachlor Epoxide ^c	0	5.2E-01	3.8E-03	na	1.1E-03	8.3E-01	6.8E-03	na	1.1E-03	-	-	-	-	8.3E-01	6.8E-03	na
Hexachlorobenzene ^c	0	-	-	na	7.7E-03	-	-	na	7.7E-03	-	-	-	-	8.3E-01	6.8E-03	na
Hexachlorobutadiene ^c	0	-	-	na	-	-	-	na	5.0E+02	-	-	-	-	-	-	na
Hexachlorocyclohexane	0	-	-	na	-	-	-	na	1.3E-01	-	-	-	-	-	-	na
Alpha-BHC ^c	0	-	-	na	1.3E-01	-	-	na	4.6E-01	-	-	-	-	-	-	na
Hexachlorocyclohexane	0	-	-	na	4.6E-01	-	-	na	6.3E-01	-	-	-	-	-	-	na
Beta-BHC ^c	0	-	-	na	6.3E-01	-	-	na	8.9E+01	-	-	-	-	-	-	na
Hexachlorocyclopentadiene	0	9.5E-01	na	na	1.7E+04	1.5E+00	-	na	6.8E+04	-	-	-	-	1.5E+00	-	na
Hexachloroethane ^c	0	-	-	na	8.9E+01	-	-	na	8.9E+01	-	-	-	-	-	-	na
Hydrogen Sulfide	0	-	2.0E+00	na	-	-	3.6E+00	na	-	-	-	-	-	-	-	na
Indeno (1,2,3-cd) pyrene ^c	0	-	-	na	4.9E-01	-	-	na	4.9E-01	-	-	-	-	-	3.6E+00	na
Iron	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	na
Isophorone ^c	0	-	-	na	2.8E+04	-	-	na	2.6E+04	-	-	-	-	-	-	na
Kepone	0	-	0.0E+00	na	-	-	0.0E+00	na	-	-	-	-	-	-	-	na
Lead	0	2.0E+01	2.3E+00	na	-	3.3E+01	4.2E+00	na	-	-	-	-	-	-	0.0E+00	na
Malathion	0	-	1.0E-01	na	-	-	1.8E-01	na	-	-	-	-	-	3.3E+01	4.2E+00	na
Manganese	0	-	-	na	-	-	-	na	-	-	-	-	-	-	1.8E-01	na
Mercury	0	1.4E+00	7.7E-01	na	5.1E-02	2.2E+00	1.4E+00	na	2.0E-01	-	-	-	-	-	-	na
Methyl Bromide	0	-	-	na	4.0E+03	-	-	na	1.6E+04	-	-	-	-	2.2E+00	1.4E+00	na
Methoxychlor	0	-	3.0E-02	na	-	-	5.4E-02	na	-	-	-	-	-	-	-	na
Mirex	0	-	0.0E+00	na	-	-	0.0E+00	na	-	-	-	-	-	-	5.4E-02	na
Monochlorobenzene	0	-	-	na	2.1E+04	-	-	na	8.4E+04	-	-	-	-	-	0.0E+00	na
Nickel	0	5.6E+01	6.3E+00	na	4.6E+03	9.0E+01	1.1E+01	na	1.8E+04	-	-	-	-	9.0E+01	1.1E+01	na
Nitrate (as N)	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	na
Nitrobenzene	0	-	-	na	1.9E+03	-	-	na	7.8E+03	-	-	-	-	-	-	na
N-Nitrosodimethylamine ^c	0	-	-	na	8.1E+01	-	-	na	8.1E+01	-	-	-	-	-	-	na
N-Nitrosodiphenylamine ^c	0	-	-	na	1.6E+02	-	-	na	1.6E+02	-	-	-	-	-	-	na
N-Nitrosodi-n-propylamine ^c	0	-	-	na	1.4E+01	-	-	na	1.4E+01	-	-	-	-	-	-	na
Parathion	0	6.5E-02	1.3E-02	na	-	1.0E-01	2.3E-02	na	-	-	-	-	-	1.0E-01	2.3E-02	na
PCB-1016	0	-	1.4E-02	na	-	-	2.5E-02	na	-	-	-	-	-	-	2.5E-02	na
PCB-1221	0	-	1.4E-02	na	-	-	2.5E-02	na	-	-	-	-	-	-	2.5E-02	na
PCB-1232	0	-	1.4E-02	na	-	-	2.5E-02	na	-	-	-	-	-	-	2.5E-02	na
PCB-1242	0	-	1.4E-02	na	-	-	2.5E-02	na	-	-	-	-	-	-	2.5E-02	na
PCB-1248	0	-	1.4E-02	na	-	-	2.5E-02	na	-	-	-	-	-	-	2.5E-02	na
PCB-1254	0	-	1.4E-02	na	-	-	2.5E-02	na	-	-	-	-	-	-	2.5E-02	na
PCB-1260	0	-	1.4E-02	na	-	-	2.5E-02	na	-	-	-	-	-	-	2.5E-02	na
PCB Total ^c	0	-	-	na	1.7E-03	-	-	na	1.7E-03	-	-	-	-	-	-	na

Parameter (ug/l unless noted) c	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)
Pentachlorophenol ^c	0	7.7E-03	5.9E-03	na	8.2E+01	1.2E-02	1.1E-02	na	8.2E+01	1.2E-02	1.1E-02	na	8.2E+01	1.2E-02	1.1E-02	na
Phenol	0	na	na	4.6E+06	1.8E+07	na	na	na	1.8E+07	na	na	na	1.8E+07	na	na	1.8E+07
Pyrene	0	na	na	1.1E+04	4.4E+04	na	na	na	4.4E+04	na	na	na	4.4E+04	na	na	4.4E+04
Radionuclides (pCi/l except Beta/Photon)	0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Gross Alpha Activity	0	na	na	1.5E+01	6.0E+01	na	na	na	6.0E+01	na	na	na	6.0E+01	na	na	6.0E+01
Beta and Photon Activity (mrem/yr)	0	na	na	4.0E+00	1.6E+01	na	na	na	1.6E+01	na	na	na	1.6E+01	na	na	1.6E+01
Strontium-90	0	na	na	8.0E+00	3.2E+01	na	na	na	3.2E+01	na	na	na	3.2E+01	na	na	3.2E+01
Tritium	0	na	na	2.0E+04	8.0E+04	na	na	na	8.0E+04	na	na	na	8.0E+04	na	na	8.0E+04
Selenium	0	2.0E+01	5.0E+00	1.1E+04	4.4E+04	3.2E+01	9.0E+00	na	4.4E+04	3.2E+01	9.0E+00	na	4.4E+04	3.2E+01	9.0E+00	na
Silver	0	3.2E-01	na	na	na	5.1E-01	na	na	na	5.1E-01	na	na	na	5.1E-01	na	na
Sulfate	0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
1,1,2,2-Tetrachloroethane ^c	0	na	na	1.1E+02	1.1E+02	na	na	na	1.1E+02	na	na	na	1.1E+02	na	na	1.1E+02
Tetrachloroethylene ^c	0	na	na	8.9E+01	8.9E+01	na	na	na	8.9E+01	na	na	na	8.9E+01	na	na	8.9E+01
Thallium	0	na	na	6.3E+00	2.5E+01	na	na	na	2.5E+01	na	na	na	2.5E+01	na	na	2.5E+01
Toluene	0	na	na	2.0E+05	8.0E+05	na	na	na	8.0E+05	na	na	na	8.0E+05	na	na	8.0E+05
Total dissolved solids	0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Toxaphene ^c	0	7.3E-01	2.0E-04	na	7.5E-03	1.2E+00	3.6E-04	na	7.5E-03	1.2E+00	3.6E-04	na	7.5E-03	1.2E+00	3.6E-04	na
Tributyltin	0	4.8E-01	6.3E-02	na	na	7.4E-01	1.1E-01	na	na	7.4E-01	1.1E-01	na	na	7.4E-01	1.1E-01	na
1,2,4-Trichlorobenzene	0	na	na	9.4E+02	3.8E+03	na	na	na	3.8E+03	na	na	na	3.8E+03	na	na	3.8E+03
1,1,2-Trichloroethane ^c	0	na	na	4.2E+02	4.2E+02	na	na	na	4.2E+02	na	na	na	4.2E+02	na	na	4.2E+02
Trichloroethylene ^c	0	na	na	8.1E+02	8.1E+02	na	na	na	8.1E+02	na	na	na	8.1E+02	na	na	8.1E+02
2,4,6-Trichlorophenol ^c	0	na	na	6.5E+01	6.5E+01	na	na	na	6.5E+01	na	na	na	6.5E+01	na	na	6.5E+01
2-(2,4,5-Trichlorophenoxy)propionic acid (Silvex)	0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Vinyl Chloride ^c	0	na	na	6.1E+01	6.1E+01	na	na	na	6.1E+01	na	na	na	6.1E+01	na	na	6.1E+01
Zinc	0	3.6E+01	3.6E+01	na	6.9E+04	5.8E+01	6.6E+01	na	2.8E+05	5.8E+01	6.6E+01	na	2.8E+05	5.8E+01	6.6E+01	na

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 20 maximum for industries and design flow for Municipalities
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
- Antidegradation WLAs are based upon a complete mix.
- Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 3Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

Metal	Target Value (SSTV)
Antimony	1.7E+04
Arsenic	1.8E+02
Barium	na
Cadmium	4.1E-01
Chromium III	2.6E+01
Chromium VI	1.0E+01
Copper	2.3E+00
Iron	na
Lead	2.5E+00
Manganese	na
Mercury	2.0E-01
Nickel	6.8E+00
Selenium	5.4E+00
Silver	2.0E-01
Zinc	2.3E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Dominion - Gordonsville
Receiving Stream: South Anna River

Permit No.: VA0087033

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information			Stream Flows			Mixing Information			Effluent Information		
Mean Hardness (as CaCO ₃) =	mg/L		1Q10 (Annual) =	1 MGD		Annual - 1Q10 Mix =	0 %		Mean Hardness (as CaCO ₃) =	30 mg/L	
90% Temperature (Annual) =	deg C		7Q10 (Annual) =	1 MGD		- 7Q10 Mix =	0 %		90% Temp (Annual) =	31 deg C	
90% Temperature (Wet season) =	deg C		3Q10 (Annual) =	1 MGD		- 3Q10 Mix =	0 %		90% Temp (Wet season) =	deg C	
90% Maximum pH =	SU		1Q10 (Wet season) =	1 MGD		Wet Season - 1Q10 Mix =	0 %		90% Maximum pH =	8.7 SU	
10% Maximum pH =	SU		3Q10 (Wet season) =	1 MGD		- 3Q10 Mix =	0 %		10% Maximum pH =	SU	
Tier Designation (1 or 2) =	1		3Q10 (Wet season) =	1 MGD					Discharge Flow =	1 MGD	
Public Water Supply (PWS) Y/N? =	n		Harmonic Mean =	1 MGD							
Trout Present Y/N? =	n		Annual Average =	1 MGD							
Early Life Stages Present Y/N? =	y										

Parameter (ug/l unless noted)	Background Conc.		Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
	Acute	Chronic	HH (PWS)	HH	HH	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenaphthene	0	0	na	2.7E+03	na	5.4E+03	na	na	na	5.4E+03	na	na	na	na	na	na	na	na	na	na	na	5.4E+03
Acrolein	0	0	na	7.8E+02	na	1.6E+03	na	na	na	1.6E+03	na	na	na	na	na	na	na	na	na	na	na	1.6E+03
Acrylonitrile ^c	0	0	na	6.6E+00	na	1.3E+01	na	na	na	1.3E+01	na	na	na	na	na	na	na	na	na	na	na	1.3E+01
Aldrin ^c	0	0	na	1.4E-03	na	2.8E-03	na	na	na	2.8E-03	na	na	na	na	na	na	na	na	na	na	na	2.8E-03
Ammonia-N (mg/l) (Yearly)	0	0	2.20E+00	2.69E-01	na	na	2.2E+00	2.7E-01	na	na	na	na	na	na	2.2E+00	2.7E-01	na	na	na	na	na	na
Ammonia-N (mg/l) (High Flow)	0	0	2.20E+00	7.78E-01	na	na	2.2E+00	7.8E-01	na	na	na	na	na	na	2.2E+00	7.8E-01	na	na	na	na	na	na
Anthrane	0	0	na	1.1E+05	na	2.2E+05	na	na	na	2.2E+05	na	na	na	na	na	na	na	na	na	na	na	2.2E+05
Antimony	0	0	na	4.3E+03	na	8.6E+03	na	na	na	8.6E+03	na	na	na	na	na	na	na	na	na	na	na	8.6E+03
Arsenic	0	0	3.4E+02	1.5E+02	na	na	3.4E+02	1.5E+02	na	na	na	na	na	na	3.4E+02	1.5E+02	na	na	na	na	na	na
Barium	0	0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Benzene ^c	0	0	na	7.1E+02	na	1.4E+03	na	na	na	1.4E+03	na	na	na	na	na	na	na	na	na	na	na	1.4E+03
Benzidine ^c	0	0	na	5.4E-03	na	1.1E-02	na	na	na	1.1E-02	na	na	na	na	na	na	na	na	na	na	na	1.1E-02
Benzo (a) anthracene ^c	0	0	na	4.9E-01	na	9.8E-01	na	na	na	9.8E-01	na	na	na	na	na	na	na	na	na	na	na	9.8E-01
Benzo (b) fluoranthene ^c	0	0	na	4.9E-01	na	9.8E-01	na	na	na	9.8E-01	na	na	na	na	na	na	na	na	na	na	na	9.8E-01
Benzo (k) fluoranthene ^c	0	0	na	4.9E-01	na	9.8E-01	na	na	na	9.8E-01	na	na	na	na	na	na	na	na	na	na	na	9.8E-01
Benzo (a) pyrene ^c	0	0	na	4.9E-01	na	9.8E-01	na	na	na	9.8E-01	na	na	na	na	na	na	na	na	na	na	na	9.8E-01
Bis(2-Chloroethyl) Ether	0	0	na	1.4E+01	na	2.8E+01	na	na	na	2.8E+01	na	na	na	na	na	na	na	na	na	na	na	2.8E+01
Bis(2-Chloroisopropyl) Ether	0	0	na	1.7E+05	na	3.4E+05	na	na	na	3.4E+05	na	na	na	na	na	na	na	na	na	na	na	3.4E+05
Bromofom ^c	0	0	na	3.6E+03	na	7.2E+03	na	na	na	7.2E+03	na	na	na	na	na	na	na	na	na	na	na	7.2E+03
Butylbenzylphthalate	0	0	na	5.2E+03	na	1.0E+04	na	na	na	1.0E+04	na	na	na	na	na	na	na	na	na	na	na	1.0E+04
Cadmium	0	0	1.0E+00	4.4E-01	na	na	1.0E+00	4.4E-01	na	na	na	na	na	na	1.0E+00	4.4E-01	na	na	na	na	na	na
Carbon Tetrachloride ^c	0	0	na	4.4E+01	na	8.8E+01	na	na	na	8.8E+01	na	na	na	na	na	na	na	na	na	na	na	8.8E+01
Chlordane ^c	0	0	2.4E+00	4.3E-03	na	2.2E-02	2.4E+00	4.3E-03	na	2.2E-02	na	na	na	na	2.4E+00	4.3E-03	na	na	na	na	na	4.4E-02
Chloride	0	0	8.6E+05	2.3E+05	na	na	8.6E+05	2.3E+05	na	na	na	na	na	na	8.6E+05	2.3E+05	na	na	na	na	na	na
TRC	0	0	1.9E+01	1.1E+01	na	na	1.9E+01	1.1E+01	na	na	na	na	na	na	1.9E+01	1.1E+01	na	na	na	na	na	na
Chlorobenzene	0	0	na	2.1E+04	na	4.2E+04	na	na	na	4.2E+04	na	na	na	na	na	na	na	na	na	na	na	4.2E+04

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	-	-	na	2.9E+04	-	-	na	5.8E+04	-	-	-	-	-	-	-	-	-	-	na	5.8E+04
Fluoranthene	0	-	-	na	3.7E+02	-	-	na	7.4E+02	-	-	-	-	-	-	-	-	-	-	na	7.4E+02
Fluorene	0	-	-	na	1.4E+04	-	-	na	2.8E+04	-	-	-	-	-	-	-	-	-	-	na	2.8E+04
Foaming Agents	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	na	-
Guthion	0	-	1.0E-02	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	na	-
Heptachlor ^c	0	5.2E-01	3.8E-03	na	2.1E-03	-	-	na	4.2E-03	-	-	-	-	-	-	-	-	-	-	na	-
Heptachlor Epoxide ^c	0	5.2E-01	3.8E-03	na	1.1E-03	-	-	na	2.2E-03	-	-	-	-	-	-	-	-	-	-	na	-
Hexachlorobenzene ^c	0	-	-	na	7.7E-03	-	-	na	1.5E-02	-	-	-	-	-	-	-	-	-	-	na	-
Hexachlorobutadiene ^c	0	-	-	na	5.0E+02	-	-	na	1.0E+03	-	-	-	-	-	-	-	-	-	-	na	-
Hexachlorocyclohexane	0	-	-	na	1.3E-01	-	-	na	2.6E-01	-	-	-	-	-	-	-	-	-	-	na	-
Alpha-BHC ^c	0	-	-	na	4.6E-01	-	-	na	9.2E-01	-	-	-	-	-	-	-	-	-	-	na	-
Beta-BHC ^c	0	-	-	na	6.3E-01	-	-	na	1.3E+00	-	-	-	-	-	-	-	-	-	-	na	-
Gamma-BHC ^c (Lindane)	0	9.5E-01	na	na	1.7E+04	-	-	na	3.4E+04	-	-	-	-	-	-	-	-	-	-	na	-
Hexachlorocyclopentadiene	0	-	-	na	8.9E+01	-	-	na	1.8E+02	-	-	-	-	-	-	-	-	-	-	na	-
Hexachloroethane ^c	0	-	2.0E+00	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	na	-
Hydrogen Sulfide	0	-	-	na	4.9E-01	-	-	na	9.8E-01	-	-	-	-	-	-	-	-	-	-	na	-
Indeno (1,2,3-cd) pyrene ^c	0	-	-	na	2.8E+04	-	-	na	5.2E+04	-	-	-	-	-	-	-	-	-	-	na	-
Iron	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	na	-
Isophorone ^c	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	na	-
Kepon	0	-	0.0E+00	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	na	-
Lead	0	2.6E+01	2.9E+00	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	na	-
Malathion	0	-	1.0E-01	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	na	-
Manganese	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	na	-
Mercury	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	na	-
Methyl Bromide	0	1.4E+00	7.7E-01	na	5.1E-02	-	-	na	1.0E-01	-	-	-	-	-	-	-	-	-	-	na	-
Methoxychlor	0	-	3.0E-02	na	4.0E+03	-	-	na	8.0E+03	-	-	-	-	-	-	-	-	-	-	na	-
Mirex	0	-	0.0E+00	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	na	-
Monochlorobenzene	0	-	-	na	2.1E+04	-	-	na	4.2E+04	-	-	-	-	-	-	-	-	-	-	na	-
Nickel	0	6.6E+01	7.3E+00	na	4.8E+03	-	-	na	9.2E+03	-	-	-	-	-	-	-	-	-	-	na	-
Nitrate (as N)	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	na	-
Nitrobenzene	0	-	-	na	1.9E+03	-	-	na	3.8E+03	-	-	-	-	-	-	-	-	-	-	na	-
N-Nitrosodimethylamine ^c	0	-	-	na	8.1E+01	-	-	na	1.6E+02	-	-	-	-	-	-	-	-	-	-	na	-
N-Nitrosodiphenylamine ^c	0	-	-	na	1.6E+02	-	-	na	3.2E+02	-	-	-	-	-	-	-	-	-	-	na	-
N-Nitrosodi-n-propylamine ^c	0	-	-	na	1.4E+01	-	-	na	2.8E+01	-	-	-	-	-	-	-	-	-	-	na	-
Parathion	0	6.5E-02	1.3E-02	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	na	-
PCB-1016	0	-	1.4E-02	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	na	-
PCB-1221	0	-	1.4E-02	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	na	-
PCB-1232	0	-	1.4E-02	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	na	-
PCB-1242	0	-	1.4E-02	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	na	-
PCB-1248	0	-	1.4E-02	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	na	-
PCB-1254	0	-	1.4E-02	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	na	-
PCB-1260	0	-	1.4E-02	na	-	-	-	na	-	-	-	-	-	-	-	-	-	-	-	na	-
PCB Total ^c	0	-	-	na	1.7E+03	-	-	na	3.4E+03	-	-	-	-	-	-	-	-	-	-	na	-

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)
Pentachlorophenol ^c	0	7.7E-03	5.9E-03	na	8.2E+01	7.7E-03	5.9E-03	na	1.8E+02	-	-	-	-	7.7E-03	5.9E-03	na
Phenol	0	-	-	na	4.8E+06	-	-	na	9.2E+06	-	-	-	-	-	-	na
Pyrene	0	-	-	na	1.1E+04	-	-	na	2.2E+04	-	-	-	-	-	-	na
Radionuclides (pCi/l except Beta/Photon)	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	na
Gross Alpha Activity	0	-	-	na	1.5E+01	-	-	na	3.0E+01	-	-	-	-	-	-	na
Beta and Photon Activity (mrem/yr)	0	-	-	na	4.0E+00	-	-	na	8.0E+00	-	-	-	-	-	-	na
Strontium-90	0	-	-	na	8.0E+00	-	-	na	1.6E+01	-	-	-	-	-	-	na
Tritium	0	-	-	na	2.0E+04	-	-	na	4.0E+04	-	-	-	-	-	-	na
Selenium	0	2.0E+01	5.0E+00	na	1.1E+04	2.0E+01	5.0E+00	na	2.2E+04	-	-	-	-	2.0E+01	5.0E+00	na
Silver	0	4.3E-01	-	na	-	4.3E-01	-	na	-	-	-	-	-	4.3E-01	-	na
Sulfate	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	na
1,1,2,2-Tetrachloroethane ^c	0	-	-	na	1.1E+02	-	-	na	2.2E+02	-	-	-	-	-	-	na
Tetrachloroethylene ^c	0	-	-	na	8.9E+01	-	-	na	1.8E+02	-	-	-	-	-	-	na
Thallium	0	-	-	na	6.3E+00	-	-	na	1.3E+01	-	-	-	-	-	-	na
Toluene	0	-	-	na	2.0E+05	-	-	na	4.0E+05	-	-	-	-	-	-	na
Total dissolved solids	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	na
Toxaphene ^c	0	7.3E-01	2.0E-04	na	7.5E-03	7.3E-01	2.0E-04	na	1.5E-02	-	-	-	-	7.3E-01	2.0E-04	na
Tributyltin	0	4.8E-01	6.3E-02	na	-	4.8E-01	6.3E-02	na	-	-	-	-	-	4.8E-01	6.3E-02	na
1,2,4-Trichlorobenzene	0	-	-	na	9.4E+02	-	-	na	1.9E+03	-	-	-	-	-	-	na
1,1,2-Trichloroethane ^c	0	-	-	na	4.2E+02	-	-	na	8.4E+02	-	-	-	-	-	-	na
Trichloroethylene ^c	0	-	-	na	8.1E+02	-	-	na	1.6E+03	-	-	-	-	-	-	na
2,4,6-Trichlorophenol ^c	0	-	-	na	6.5E+01	-	-	na	1.3E+02	-	-	-	-	-	-	na
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	-	-	na	-	-	-	na	-	-	-	-	-	-	-	na
Vinyl Chloride ^c	0	-	-	na	6.1E+01	-	-	na	-	-	-	-	-	-	-	na
Zinc	0	4.2E+01	4.3E+01	na	6.9E+04	4.2E+01	4.3E+01	na	1.4E+05	-	-	-	-	4.2E+01	4.3E+01	na

Notes

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
Antidegradation WLAs are based upon a complete mix.
Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

Metal	Target Value (SSTV)
Antimony	8.6E+03
Arsenic	9.0E+01
Barium	na
Cadmium	2.6E-01
Chromium III	1.7E+01
Chromium VI	6.4E+00
Copper	1.7E+00
Iron	na
Lead	1.8E+00
Manganese	na
Mercury	1.0E-01
Nickel	4.4E+00
Selenium	3.0E+00
Silver	1.7E-01
Zinc	1.7E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

7/24/2007 1:41:33 PM

Facility = Dominion - Gordonsville

Chemical = Chlorine

Chronic averaging period = 4

WLAa = 19

WLAc = 11

Q.L. = 100

samples/mo. = 1

samples/wk. = 1

Summary of Statistics:

observations = 1

Expected Value = 200

Variance = 14400

C.V. = 0.6

97th percentile daily values = 486.683

97th percentile 4 day average = 332.758

97th percentile 30 day average = 241.210

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity

Maximum Daily Limit = 16.0883226245855

Average Weekly limit = 16.0883226245856

Average Monthly Limit = 16.0883226245856

} $\mu\text{g/l}$

The data are:

200

12/4/2007 10:59:41 AM

Facility = Dominion - Gordonsville

Chemical = Copper

Chronic averaging period = 4

WLAa = 5.8

WLAc = 4.9

Q.L. = 2.2

samples/mo. = 1

samples/wk. = 1

Summary of Statistics:

observations = 7

Expected Value = 5.17428

Variance = 9.63836

C.V. = 0.6

97th percentile daily values = 12.5911

97th percentile 4 day average = 8.60892

97th percentile 30 day average = 6.24046

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity

Maximum Daily Limit = 5.8

Average Weekly limit = 5.8

Average Monthly Limit = 5.8

} ug/l

The data are:

4.35

5.16

8.25

3.24

3.48

6.61

5.13

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Spreadsheet for determination of WET test endpoints or WET limits														
2															
3															
4	Excel 97														
5	Revision Date: 01/10/05														
6	File: WETLIM10.xls														
7	(MIX EXE required also)														
8															
9															
10															
11															
12															
13															
14															
15	Enter data in the cells with blue type:														
16															
17	Entry Date:	07/10/07													
18	Facility Name:	Dominion Gordonsville													
19	VPDES Number:	VA0087033													
20	Outfall Number:	1													
21	Plant Flow:	0.15 MGD													
22	Acute 1Q10:	0 MGD													
23	Chronic 7Q10:	0 MGD													
24															
25															
26	Are data available to calculate CV? (Y/N)	N													
27	Are data available to calculate ACR? (Y/N)	N													
28															
29															
30	IWC _s	100 %	Plant flow/plant flow + 1Q10												
31	IWC _c	100 %	Plant flow/plant flow + 7Q10												
32															
33	Dilution, acute	1	100/IWC _a												
34	Dilution, chronic	1	100/IWC _c												
35															
36	WLA _s	0.3 Instream criterion (0.3 TU _a) X's Dilution, acute													
37	WLA _c	1 Instream criterion (1.0 TU _c) X's Dilution, chronic													
38	WLA _{sc}	3 ACR X's WLA _s - converts acute WLA to chronic units													
39															
40	ACR - acute/chronic ratio	10 LC50/NOEC (Default is 10 - if data are available, use tables Page 3)													
41	CY-Coefficient of variation	0.6 Default of 0.6 - if data are available, use tables Page 2)													
42	Constants	1eA	0.4109447 Default = 0.41												
43		1eB	0.6010373 Default = 0.60												
44		1eC	2.4334175 Default = 2.43												
45		1eD	2.4334175 Default = 2.43 (1 samp)												
46			No. of sample	1											
47	LTA _s	1.2328341	WLA _s X's eA												
48	LTA _c	0.6010373	WLA _c X's eB												
49	MDL** with LTA _s	3.000000074	TU _s	NOEC =	33.333333	(Protects from acute/chronic toxicity)	Rounded NOEC's								
50	MDL** with LTA _c	1.462574684	TU _c	NOEC =	68.372577	(Protects from chronic toxicity)	NOEC = 34 %								
51	AML with lowest LTA	1.462574684	TU _s	NOEC =	68.372577	Lowest LTA X's eD	NOEC = 69 %								
52															
53	IF ONLY ACUTE ENDPOINT/LIMIT IS NEEDED, CONVERT MDL FROM TU _s TO TU _c														
54															
55	MDL with LTA _s	0.300000007	TU _s	LC50 =	333.333325 %	Use NOAEC=100%	Rounded LC50's								
56	MDL with LTA _c	0.146257468	TU _c	LC50 =	683.725768 %	Use NOAEC=100%	LC50 = NA %								
57															
58															

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
59	Page 2 - Follow the directions to develop a site specific CV (coefficient of variation)														
60	IF YOU HAVE AT LEAST 10 DATA POINTS THAT														
61	ARE QUANTIFIABLE (NOT "<" OR ">")														
62	FOR A SPECIES, ENTER THE DATA IN EITHER														
63	COLUMN "G" (VERTEBRATE) OR COLUMN														
64	"J" (INVERTEBRATE). THE "CV" WILL BE														
65	PICKED UP FOR THE CALCULATIONS														
66	BELOW. THE DEFAULT VALUES FOR eA,														
67	eB, AND eC WILL CHANGE IF THE "CV" IS														
68	ANYTHING OTHER THAN 0.6														
69															
70															
71															
72															
73															
74															
75	Coefficient of Variation for effluent tests														
76	CV = 0.6 (Default 0.6)														
77															
78	$\sigma^2 = 0.3074847$														
79	$\sigma = 0.554513029$														
80															
81	Using the log variance to develop eA														
82	(P, 100, step 2a of TSD)														
83	$Z = 1.881$ (97% probability stat from table)														
84	A = -0.88929666														
85	eA = 0.410844686														
86															
87	Using the log variance to develop eB														
88	(P, 100, step 2b of TSD)														
89	$\sigma^2 = 0.086177696$														
90	$\sigma = 0.293560379$														
91	B = -0.50909823														
92	eB = 0.601037335														
93															
94	Using the log variance to develop eC														
95	(P, 100, step 4a of TSD)														
96															
97	$\sigma^2 = 0.3074847$														
98	$\sigma = 0.554513029$														
99	C = 0.889296658														
100	eC = 2.433417525														
101															
102	Using the log variance to develop eD														
103	(P, 100, step 4b of TSD)														
104	n = 1														
105	$\sigma^2 = 0.3074847$														
106	$\sigma = 0.554513029$														
107	D = 0.889296658														
108	eD = 2.433417525														
109															

Cell: I9

Comment: This is assuming that the data are Type 2 data (none of the data in the data set are censored - "<" or ">").

Cell: K18

Comment: This is assuming that the data are Type 2 data (none of the data in the data set are censored - "<" or ">").

Cell: J22

Comment: Remember to change the "N" to "Y" if you have ratios entered, otherwise, they won't be used in the calculations.

Cell: C40

Comment: If you have entered data to calculate an ACR on page 3, and this is still defaulted to "10", make sure you have selected "Y" in cell E21

Cell: C41

Comment: If you have entered data to calculate an effluent specific CV on page 2, and this is still defaulted to "0.6", make sure you have selected "Y" in cell E20

Cell: L48

Comment: See Row 151 for the appropriate dilution series to use for these NOEC's

Cell: G62

Comment:

Vertebrates are:

Pimephales promelas

Oncorhynchus mykiss

Cyprinodon variegatus

Cell: J62

Comment:

Invertebrates are:

Ceriodaphnia dubia

Myiodopsis bahia

Cell: C117

Comment: Vertebrates are:

Pimephales promelas

Cyprinodon variegatus

Cell: M119

Comment: The ACR has been picked up from cell C34 on Page 1. If you have paired data to calculate an ACR, enter it in the tables to the left, and make sure you have a "Y" in cell E21 on Page 1. Otherwise, the default of 10 will be used to convert your acute data.

Cell: M121

Comment: If you are only concerned with acute data, you can enter it in the NOEC column for conversion and the number calculated will be equivalent to the TUA. The calculation is the same: 100NOEC = TUC or 100(LC50 = TUA.

Cell: C138

Comment: Invertebrates are:

Ceriodaphnia dubia

Myiodopsis bahia

Citizens may comment on the proposed reissuance of a permit that allows the release of treated industrial wastewater and storm water into a water body in Louisa County, Virginia.

PUBLIC COMMENT PERIOD: **TBD**, 2007 to 5:00 p.m. on **TBD**, 2007.

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Industrial

Owners or operators of industrial facilities that discharge or propose to discharge treated industrial wastewater and stormwater into the streams, rivers or bays of Virginia from a point source must apply for this permit. In general, point sources are fixed sources of pollution such as pipes, ditches or channels. The applicant must submit the application to the Department of Environmental Quality, under the authority of the State Water Control Board.

PURPOSE OF NOTICE: To invite the public to comment on the draft permit.

NAME, ADDRESS AND PERMIT NUMBER OF APPLICANT: Virginia Electric and Power Company
5000 Dominion Boulevard, Glen Allen, VA 23060
VA0087033

NAME AND ADDRESS OF FACILITY: Virginia Electric and Power Company – Gordonsville Power Station
115 Red Hill Road, Gordonsville, VA 22942

Project description: Virginia Electric and Power Company has applied for a reissuance of a permit for Virginia Electric and Power Company – Gordonsville Power Station in Louisa County, Virginia. The applicant proposes to release treated industrial wastewater and storm water at a rate of 0.05 Million Gallons per Day into the South Anna River in Louisa County that is in the York River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, Dissolved Oxygen, Temperature, Total Residual Chlorine, Total Recoverable Copper, Total Suspended Solids and Oil and Grease. Acute toxicity will also be monitored using *Pimephales promelas* and *Ceriodaphnia dubia*.

HOW A DECISION IS MADE: After public comments have been considered and addressed by the permit or other means, DEQ will make the final decision unless there is a public hearing. DEQ may hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the proposed permit. If there is a public hearing, the State Water Control Board will make the final decision.

HOW TO COMMENT: DEQ accepts comments by e-mail, fax or postal mail. All comments must be in writing and be received by DEQ during the comment period. The public also may request a public hearing.

WRITTEN COMMENTS MUST INCLUDE:

1. The names, mailing addresses and telephone numbers of the person commenting and of all people represented by the citizen.
2. If a public hearing is requested, the reason for holding a hearing, including associated concerns.
3. A brief, informal statement regarding the extent of the interest of the person commenting, including how the operation of the facility or activity affects the citizen.

TO REVIEW THE DRAFT PERMIT AND APPLICATION: The public may review the documents at the DEQ-Northern Virginia Regional Office every work day by appointment.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION:

Name: Susan Mackert

Address: DEQ-Northern Virginia Regional Office, 13901 Crown Court, Woodbridge, VA 22193

Phone: (703) 583-3853 E-mail: sdmackert@deq.virginia.gov Fax: (703) 583-3841

Revised 2/2003

**State "Transmittal Checklist" to Assist in Targeting
Municipal and Industrial Individual NPDES Draft Permits for Review**

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name: Dominion - Gordonsville
 NPDES Permit Number: VA0087033
 Permit Writer Name: Susan Mackert
 Date: July 9, 2007

Major ☐ Minor ☒ Industrial ☒ Municipal ☐

I.A. Draft Permit Package Submittal Includes:

	Yes	No	N/A
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?	X		
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?			X
8. Whole Effluent Toxicity Test summary and analysis?	X		
9. Permit Rating Sheet for new or modified industrial facilities?	X		

I.B. Permit/Facility Characteristics

	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet or permit contain a description of the wastewater treatment process?	X		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet or permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?	X		
a. Has a TMDL been developed and approved by EPA for the impaired water?	X		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?			X
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?		X	
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	
10. Does the permit authorize discharges of storm water?	X		

	Yes	No	N/A
I.B. Permit/Facility Characteristics – cont.			
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?	X		
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Review Checklist – For Non-Municipals (To be completed and included in the record for all non-POTWs)

	Yes	No	N/A
II.A. Permit Cover Page/Administration			
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

	Yes	No	N/A
II.B. Effluent Limits – General Elements			
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?	X		

	Yes	No	N/A
II.C. Technology-Based Effluent Limits (Effluent Guidelines & BPJ)			
1. Is the facility subject to a national effluent limitations guideline (ELG)?	X		
a. If yes, does the record adequately document the categorization process, including an evaluation of whether the facility is a new source or an existing source?	X		
b. If no, does the record indicate that a technology-based analysis based on Best Professional Judgement (BPJ) was used for all pollutants of concern discharged at treatable concentrations?			X
2. For all limits developed based on BPJ, does the record indicate that the limits are consistent with the criteria established at 40 CFR 125.3(d)?	X		
3. Does the fact sheet adequately document the calculations used to develop both ELG and/or BPJ technology-based effluent limits?	X		
4. For all limits that are based on production or flow, does the record indicate that the calculations are based on a “reasonable measure of ACTUAL production” for the facility (not design)?	X		
5. Does the permit contain “tiered” limits that reflect projected increases in production or flow?		X	
a. If yes, does the permit require the facility to notify the permitting authority when alternate levels of production or flow are attained?			X
6. Are technology-based permit limits expressed in appropriate units of measure (e.g., concentration, mass, SU)?	X		
7. Are all technology-based limits expressed in terms of both maximum daily, weekly average, and/or monthly average limits?	X		
8. Are any final limits less stringent than required by applicable effluent limitations guidelines or BPJ?		X	

	Yes	No	N/A
II.D. Water Quality-Based Effluent Limits			
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the record indicate that any WQBELs were derived from a completed and EPA approved TMDL?			X
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a “reasonable potential” evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the “reasonable potential” evaluation was performed in accordance with the State’s approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		

II.D. Water Quality-Based Effluent Limits – cont.	Yes	No	N/A
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have “reasonable potential”?	X		
d. Does the fact sheet indicate that the “reasonable potential” and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations where data are available)?	X		
e. Does the permit contain numeric effluent limits for all pollutants for which “reasonable potential” was determined?	X		
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term (e.g., average monthly) AND short-term (e.g., maximum daily, weekly average, instantaneous) effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the fact sheet indicate that an “antidegradation” review was performed in accordance with the State’s approved antidegradation policy?	X		

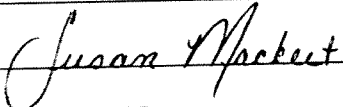
II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require testing for Whole Effluent Toxicity in accordance with the State’s standard practices?	X		

II.F. Special Conditions	Yes	No	N/A
1. Does the permit require development and implementation of a Best Management Practices (BMP) plan or site-specific BMPs?	X		
a. If yes, does the permit adequately incorporate and require compliance with the BMPs?	X		
2. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
3. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		

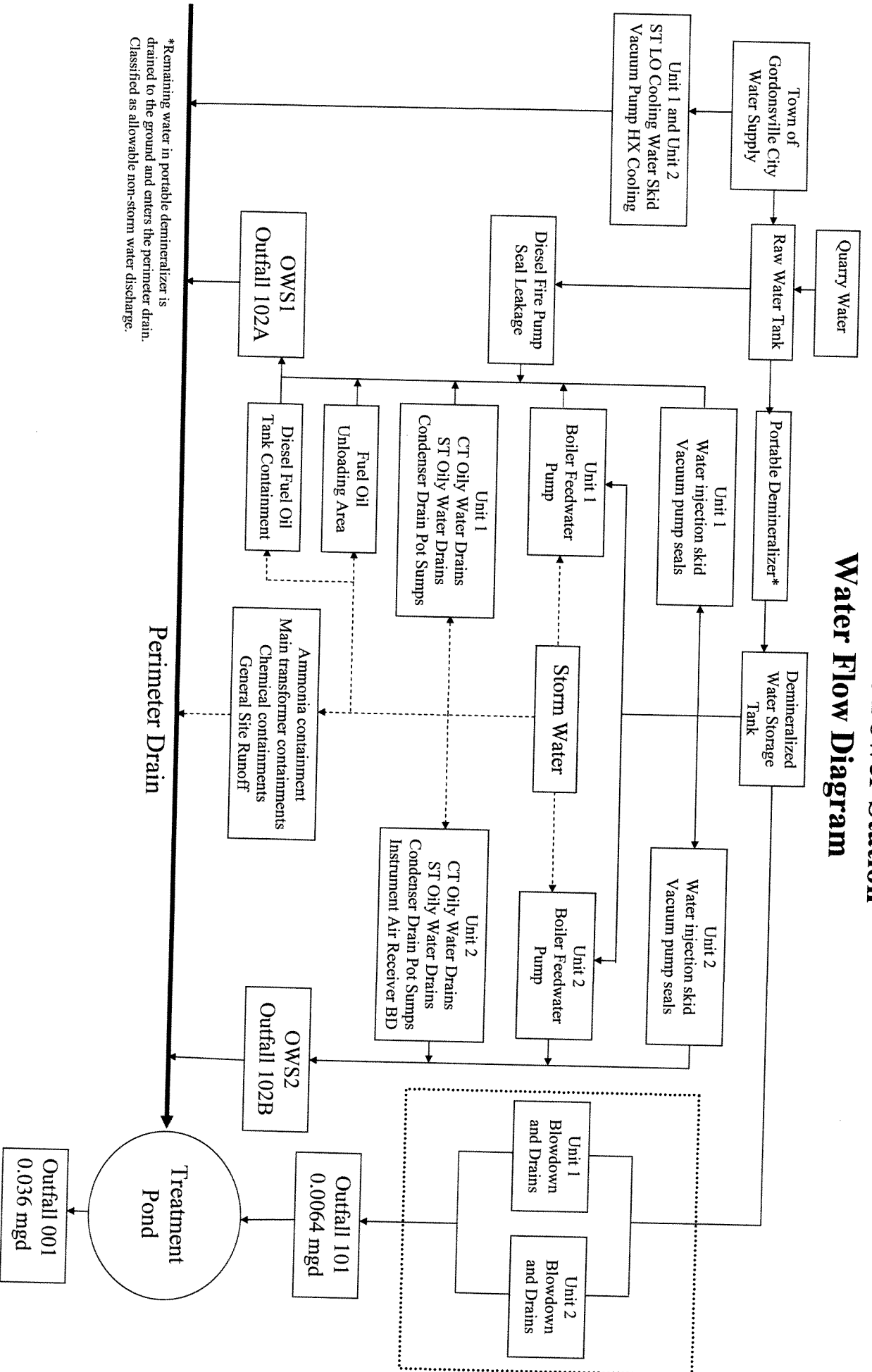
II.G. Standard Conditions		Yes	No	N/A
1. Does the permit contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?		X		
List of Standard Conditions – 40 CFR 122.41				
Duty to comply	Property rights	Reporting Requirements		
Duty to reapply	Duty to provide information	Planned change		
Need to halt or reduce activity	Inspections and entry	Anticipated noncompliance		
not a defense	Monitoring and records	Transfers		
Duty to mitigate	Signatory requirement	Monitoring reports		
Proper O & M	Bypass	Compliance schedules		
Permit actions	Upset	24-Hour reporting		
		Other non-compliance		
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for existing non-municipal dischargers regarding pollutant notification levels [40 CFR 122.42(a)]?		X		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	<u>Susan Mackert</u>
Title	<u>Environmental Specialist II</u>
Signature	<u></u>
Date	<u>July 9, 2007</u>

Gordonsville Power Station Water Flow Diagram



*Remaining water in portable demineralizer is drained to the ground and enters the perimeter drain. Classified as allowable non-storm water discharge.

MEMORANDUM

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

NORTHERN REGIONAL OFFICE

13901 Crown Court

Woodbridge, VA 22193

SUBJECT: Dominion – Gordonsville Power Station (VA0087033)

TO: Modification File

FROM: Susan Mackert

DATE: September 30, 2010

A site visit was conducted on August 31, 2010, in support of the permit modification request received on May 14, 2010. The modification was requested by the permittee to address changes in the oily wastewater collection system and to incorporate new copper limitations resulting from the Water Effects Ratio (WER) and chemical translator studies.

The new oily wastewater treatment system has two above ground oil water separators, one for each generating unit. These separators came on-line in April 2010. The two separators receive primarily the same wastewaters from each generating unit. In addition to the installation of the two above ground separators, the station has replaced the underground piping system with an above-ground system that facilitates inspection and maintenance. Both oil water separators discharge to a concrete perimeter ditch, which also receives storm water runoff from the majority of the property. The perimeter ditch enters the facility's holding pond with final discharge to the South Anna River via Outfall 001.

The permittee has requested that the discharge from the two oil water separators be treated as a single internal discharge with the outfalls designated as 102A (Unit 1 oil water separator) and 102B (Unit 2 oil water separator). The DEQ compliance tracking database does not acknowledge non-numeric outfall designations. Therefore, the proposed naming convention of Outfall 102A and Outfall 102B cannot be applied. Staff recommends the discharge from the Unit 1 oil water separator be deemed Outfall 103 (photo 1) and the discharge from the Unit 2 oil water separator be deemed Outfall 104 (photo 2). This naming convention facilitates tracking by compliance as well as participation by the facility in the electronic discharge monitoring report (eDMR) program.

The following latitude and longitude coordinates for Outfall 103 and Outfall 104 were obtained while on site. Both outfalls combine prior to discharge to the facility's retention pond (photo 3).

Outfall Coordinates			
Outfall 103		Outfall 104	
Latitude	38° 07'30.4" N	Latitude	38° 07'27.2" N
Longitude	78° 12'10.1" W	Longitude	78° 12'8.5" W

Because of the new treatment process described, Outfall 102 is no longer in service. The discharge location to the holding pond was capped underground in late 2009 (photo 4).



Photo 1. Outfall 102A which is now considered Outfall 103.



Photo 2. Outfall 102B which is now considered Outfall 104.



Photo 3. The arrow points to the approximate location of the combined discharge from Outfall 103 and Outfall 104 to the retention pond.



Photo 4. Closed Outfall 102.

DEPARTMENT OF ENVIRONMENTAL QUALITY

SUBJECT: Review of Gordonsville Power Station Water Effect Ratio Study

By: Alex M. Barron

Date: January 5, 2011
(Modified from September 9, 2010 memo to reflect EPA's review)

Summary Finding:

Dominion, Electric Environmental Services conducted a streamlined copper water effect ratio (WER) study for the Gordonsville Power Station, in Gordonsville, Virginia. The study followed EPA's guidelines for a streamlined copper WER study under suitable conditions and resulted in establishing a WER of 2.593 to be applied to dissolved copper concentrations. The WER will be used to adjust the copper criteria for copper and calculate the resulting waste load allocations (WLA) for this permit and will be used to make permit decisions for the need for copper discharge limits for the Gordonsville Power Station.

Description of study and review:

The Gordonsville Power Station, in Louisa County Virginia conducted a water effect ratio (WER) study for copper in order to establish a WER that can be applied to the Virginian copper criteria equations to calculate copper criteria that would apply to their permitted discharge, consisting of boiler blowdown water and stormwater.

Virginia's water quality criteria for copper in freshwater consists of formulas to adjust the acute or chronic criteria for hardness using formulas developed and recommended by the U.S. Environmental Protection Agency (EPA). The Virginia criteria formulas include a water effect ratio (WER) which is set at a default value of 1.0 unless a WER study is performed for a specific receiving stream and discharge to establish a WER for that receiving stream. The Gordonsville Power Station conducted the WER study in order to establish a WER applicable to their receiving stream and to their discharge permit.

The Virginia freshwater criteria formulas for copper are shown below.

Freshwater acute criterion ($\mu\text{g/l}$)

$$\text{WER} \times [e^{0.9422[\ln(\text{hardness})]-1.700}] \times (\text{CFa})$$

Freshwater chronic criterion ($\mu\text{g/l}$)

$$\text{WER} \times [e^{0.8545[\ln(\text{hardness})]-1.702}] \times (\text{CFc})$$

WER = Water Effect Ratio = 1 unless shown otherwise
under 9 VAC 25-260-140.F and listed in 9 VAC 25-260-310.

e = natural antilogarithm
ln=natural logarithm
CFa = 0.960
CFc = 0.960

WER Study:

The Gordonsville Power Station conducted a water effect ratio (WER) study for copper in order to establish a WER that can be applied to the Virginian copper criteria equations to calculate copper criteria that would apply to the receiving stream and to their discharge permit. This study followed the EPA guidance for a Streamlined Water-Effect Ratio Procedure for Discharges of Copper EPA-822-R-01-05 (hereafter referred to as the streamlined WER guidance). This guidance document is available at: <http://epa.gov/waterscience/criteria/copper/2003/index.htm>.

This streamlined WER guidance requires two sets of side-by side WER toxicity tests, conducted at different times at least a month apart and using a representative sample of the effluent and stream water mix at permit conditions. Each WER test consists of two side-by side toxicity tests using added copper to establish the LC₅₀ value for copper. One of the tests is conducted in clean laboratory water and another test is conducted in simulated stream water consisting of receiving stream water and effluent mixed at the conditions of the permit. The two LC₅₀ values for these two toxicity tests are used to calculate a water effect ratio by dividing the LC₅₀ value from the test with the simulated stream-water by the LC₅₀ value from the lab-water test.

A review of the streamlined water effect ratio (WER) study for the Gordonsville Power Station indicates that the set of toxicity tests conducted in August 2009 and September were conducted under acceptable conditions and are suitable for establishing a WER for this permitted facility. In all tests, the testing laboratory measured the concentrations of copper in the toxicity tests and calculated LC₅₀ values based on both dissolved and total copper measurements. This allowed for the calculation of both dissolved and total copper WERs. Although this report provides data for both dissolved and total recoverable copper concentrations; the primary focus of this WER report is the dissolved copper in order to develop a dissolved WER that can be used to adjust the Virginia criteria, which is expressed as dissolved copper. Additional, permit specific issues are being investigated with separate studies conducted to investigate a chemical translator applicable to this discharge, as well as studies on stream flow and hardness for the receiving stream.

In both sets of tests the LC₅₀ values for the lab-water tests were lower than the species mean acute value (SMAV) from other LC₅₀ values reported in the literature for the test species *Ceriodaphnia dubia* as reported by EPA in the Streamlined Water-Effect Ratio Procedure for Discharges of Copper. This is not unusual in current toxicity tests with this species because the typical reference laboratory waters used in labs currently are often much "cleaner" (resulting in lower EC50 values) than the reference lab waters used in many of the original tests that form the basis for the criteria. To account for this and

appropriately develop a WER that applies to the original criteria, EPA's streamlined WER guidance requires (on page 13 and Appendix B page 17) that the SMAV reported in the EPA streamlined WER guidance be used to establish the WER for this discharge and receiving stream. Before calculating the WERs, all LC₅₀ values from the toxicity tests and SMAVs from the EPA streamlined WER guidance (Appendix B page 17) were normalized to the same hardness level of 40 mg/L as CaCO₃ (the hardness that is used for this stream in the permit). The hardness normalization was done using the following formula as described in EPA's streamlined WER guidance (page 13);

LC₅₀ at standard hardness =

$$LC_{50 \text{ at sample hardness}} \times (\text{standard hardness} / \text{sample hardness})^{0.9422}$$

The consultant's report presented the findings by normalizing the original LC₅₀ values to a reference hardness of 40 (representative to the hardness in the various toxicity tests and close to what will be the basis for the permit calculations); however the resulting WERs are the same regardless of the hardness used, as long as all values are normalized to the same hardness level. The original LC₅₀ values from the two acceptable tests from August and September 2009, as well as these LC₅₀ values after being normalized to the reference hardness of 40 and the resulting WERs are shown in Table 1 attached below. ..

Final WER

The final WER to be used with this permit is the geometric mean of the two dissolved copper WERs established in the study.

The final dissolved copper WER demonstrated by this study is 2.593.

At a hardness of 40 the acute criterion is 5.7 µg/L x (WER) 2.593 = 14.7

This would be rounded to 15 µg/L.

DEQ Review and Approval of WER by DEQ:

The Virginia Department of Environmental Quality's Water Quality Standards Unit has reviewed this study and approves the use of a dissolved copper WER of 2.593 to adjust the copper criteria as it applies to the Gordonsville Power Station's permit and receiving stream, the South Anna River. This dissolved copper WER of 2.593 will be used to adjust the copper criteria and calculate the resulting waste load allocations (WLA) for this permit and will be used to make permit decisions for the need for copper discharge limits for the Gordonsville Power Station.

WER review by EPA and application in permits procedure:

DEQ submitted the results of the WER study to the U.S. Environmental Protection Agency (EPA) for their review. EPA concluded that they believe that the WER study demonstrating a WER of 2.593 applied to dissolved copper measurements could provide a sound scientific rationale to support the copper site-specific WER as applied to the

Gordonsville Power station NPDES permit. EPA's review of the WER study is subject to any new information that may arise through the public notice process.

The Virginia water Quality Standards (WQS) allow for a permittee to demonstrate that a WER is appropriate for their discharge and receiving stream. The WQS states that the WER shall be described in the public notice of the permit proceedings. DEQ action to approve or disapprove a WER applicable to a permittee is a case decision rather than an amendment to the WQS. Decisions regarding WERs are subject to the public participation requirements of the Permit Regulation.

The WER-modified copper criteria can be subjected to public participations via a permit related comment period, either via a permit re-issuance or permit modification.

Table 1;

Summary of all LC₅₀ values from the Gordonsville Power Station WER studies; showing original values normalized to a standard hardness of 40 (i.e. at permit condition hardness)

Test Description	LC₅₀ (dissolved)	LC50 (total recoverable)	LC50 (dissolved) (Normalized to hardness 40 mg/L)	LC50 (total) (Normalized to 40 hardness mg/L)
August 19-21, 2009; Lab water (hardness 42 mg/L)	2.574 µg/L	3.773 µg/L	2.458 µg/L	3.603µg/L
August 19-21, 2009; (hardness 42 mg/L) simulated stream water	38.18 µg/L	75.17µg/L	36.46 µg/L	71.79 µg/L
September 23-25, 2009; Lab water (hardness = 42)	1.897 µg/L	2.477 µg/L	1.812 µg/L	2.366 µg/L
September 23-25, 2009; (hardness =38) simulated stream water	15.28 µg/L	28.43 µg/L	16.04 µg/L	29.84 µg/L
Species Mean Acute Value (SMAV) (see EPA Cu-WER Guidance, page 17)	Dissolved Cu SMAV @ 100 hardness	Total Cu SMAV @ 100 hardness	Dissolved Cu SMAV (Normalized to hardness of 40 mg/L)	Total Cu SMAV @ (Normalized to hardness of 40 mg/L)
<i>Ceriodaphnia. dubia</i> SMAV at hardness = 100: (see EPA Cu-WER Guidance, page 17)	22.11 µg/L	24.00 µg/L	9.325 µg/L	10.12 µg/L
WERs:	Dissolved Cu WER	Total Cu WER		
August 2009 WER (using SMAV normalized to hardness @ 40 mg/L)	36.46 / 9.325 = 3.910	71.79 / 10.12 = 7.094		
September 2009 WER (using SMAV normalized to hardness @ 40 mg/L)	16.04 / 9.325 = 1.720	29.84 / 10.12 = 2.949		
	Final WER (dissolved)	Final WER (total)		
Final WER (geometric mean of August and September WERs)	2.593 (dissolved copper)	4.574 (total copper)		

MEMORANDUM

Virginia Department of Environmental Quality Office Water Quality Monitoring and Assessment

629 East Main Street
Post Office Box 10009
Richmond, Virginia 23240-0009

11th Floor
804.698.4449
804.698.4116 fax

SUBJECT: Dominion Power Gordonsville Power Station Chemical Translator Project

TO: Susan Mackert

FROM: R.E. Stewart *R.E. STEWART*

DATE: Monday, November 29, 2010

COPIES: Darryl Glover, Alex Barron, Bryant Thomas

The Gordonsville Power Station Chemical Translator Project as submitted to the Department is a study conducted by Dominion Power and subcontractors to determine the ratio of instream dissolved Copper to total recoverable Copper. Copper in the dissolved form is considered bioavailable to aquatic organisms and its concentration is limited by the Department's Water Quality Standards, 9 VAC 25-260 - Virginia Water Quality Standards. Total Copper (total recoverable) may contain species of Copper that are not dissolved and therefore considered not bioavailable. By determining the ratio of dissolved to total Copper effluent permit limits may be adjusted to account for only the dissolved fraction of Copper entering the receiving stream.

The Project as presented to the Department on 14 May 2010 is well prepared and thorough and if implemented as described will produce data that are acceptable to the Department. The study results and conclusions for the derivation of a chemical translator value for Copper are well prepared and indicate high quality data. The final chemical translator, f_D , value of 0.4052 is acceptable for the application of adjusting a final effluent permit limit for Copper.

The chemical translator Project was reviewed and deemed acceptable on 7 September 2010.

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Dominion - Gordonsville
Receiving Stream: South Anna River

Permit No.: VA0087033

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO₃) = 65 mg/L
90% Temperature (Annual) = deg C
90% Temperature (Wet season) = deg C
90% Maximum pH = SU
10% Maximum pH = SU
Tier Designation (1 or 2) = 1
Public Water Supply (PWS) Y/N? = n
Trout Present Y/N? = n
Early Life Stages Present Y/N? = y

Stream Flows

1Q10 (Annual) = 0.03 MGD
7Q10 (Annual) = 0.04 MGD
30C10 (Annual) = 0 MGD
1Q10 (Wet season) = 0.46 MGD
30C10 (Wet season) = 0 MGD
30C5 = 0.15 MGD
Harmonic Mean = 0 MGD

Mixing Information

Annual - 1Q10 Mix = 100 %
- 7Q10 Mix = 100 %
- 30C10 Mix = 100 %
Wet Season - 1Q10 Mix = 100 %
- 30C10 Mix = 100 %

Effluent Information

Mean Hardness (as CaCO₃) = 8.5 mg/L
90% Temp (Annual) = 31 deg C
90% Temp (Wet season) = deg C
90% Maximum pH = 8.7 SU
10% Maximum pH = SU
Discharge Flow = 0.05 MGD

Parameter (ugl unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)
Acenaphthene	0	--	--	na	9.9E+02	--	--	na	4.0E+03	--	--	--	--	--	--	na
Acrolein	0	--	--	na	9.3E+00	--	--	na	3.7E+01	--	--	--	--	--	--	na
Acrylonitrile ^c	0	--	--	na	2.5E+00	--	--	na	2.5E+00	--	--	--	--	--	--	na
Aldrin ^c	0	3.0E+00	--	na	5.0E-04	4.8E+00	--	na	5.0E-04	--	--	--	--	--	--	na
Ammonia-N (mg/l) (Yearly)	0	5.84E+01	2.69E-01	na	--	9.3E+01	2.7E-01	na	--	--	--	--	--	--	--	na
Ammonia-N (mg/l) (High Flow)	0	5.84E+01	7.78E-01	na	--	6.0E+02	7.8E-01	na	--	--	--	--	--	--	--	na
Anthracene	0	--	--	na	4.0E+04	--	--	na	1.6E+05	--	--	--	--	--	--	na
Antimony	0	--	--	na	6.4E+02	--	--	na	2.6E+03	--	--	--	--	--	--	na
Arsenic	0	3.4E+02	1.5E+02	na	--	5.4E+02	2.7E+02	na	--	--	--	--	--	--	--	na
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	na
Benzene ^c	0	--	--	na	5.1E+02	--	--	na	5.1E+02	--	--	--	--	--	--	na
Benzidine ^c	0	--	--	na	2.0E-03	--	--	na	2.0E-03	--	--	--	--	--	--	na
Benzo (a) anthracene ^c	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	na
Benzo (b) fluoranthene ^c	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	na
Benzo (k) fluoranthene ^c	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	na
Benzo (a) pyrene ^c	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	na
Bis(2-Chloroethyl) Ether ^c	0	--	--	na	5.3E+00	--	--	na	5.3E+00	--	--	--	--	--	--	na
Bis(2-Chloroisopropyl) Ether	0	--	--	na	6.5E+04	--	--	na	2.6E+05	--	--	--	--	--	--	na
Bis(2-Ethylhexyl) Phthalate ^c	0	--	--	na	2.2E+01	--	--	na	2.2E+01	--	--	--	--	--	--	na
Bromofom ^c	0	--	--	na	1.4E+03	--	--	na	1.4E+03	--	--	--	--	--	--	na
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	7.6E+03	--	--	--	--	--	--	na
Cadmium	0	1.0E+00	4.8E-01	na	--	1.6E+00	8.7E-01	na	--	--	--	--	--	--	--	na
Carbon Tetrachloride ^c	0	--	--	na	1.6E+01	--	--	na	1.6E+01	--	--	--	--	--	--	na
Chlordane ^c	0	2.4E+00	4.3E-03	na	8.1E-03	3.8E+00	7.7E-03	na	8.1E-03	--	--	--	--	--	--	na
Chloride	0	8.6E+05	2.3E+05	na	--	1.4E+06	4.1E+05	na	--	--	--	--	--	--	--	na
THC	0	1.9E+01	1.1E+01	na	--	3.0E+01	2.0E+01	na	--	--	--	--	--	--	--	na
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	6.4E+03	--	--	--	--	--	--	na

Parameter (μg/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations					
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH						
Chlorobromomethane ^c	0	--	--	na	1.3E+02	--	--	na	1.3E+02	--	--	--	--	--	--	--	--	--	--	--	--	na	1.3E+02
Chloroform	0	--	--	na	1.1E+04	--	--	na	4.4E+04	--	--	--	--	--	--	--	--	--	--	--	--	na	4.4E+04
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	6.4E+03	--	--	--	--	--	--	--	--	--	--	--	--	na	6.4E+03
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	6.0E+02	--	--	--	--	--	--	--	--	--	--	--	--	na	6.0E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	1.3E-01	7.4E-02	na	--	--	--	--	--	--	--	--	--	--	--	--	--	na	6.0E+02
Chromium III	0	2.1E+02	3.0E+01	na	--	3.4E+02	5.5E+01	na	--	--	--	--	--	--	--	--	--	--	--	--	--	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	2.6E+01	2.0E+01	na	--	--	--	--	--	--	--	--	--	--	--	--	--	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene ^c	0	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	--	--	--	--	--	--	--	--	--	--	na	--
Copper	0	4.3E+00	3.5E+00	na	--	6.8E+00	6.3E+00	na	--	--	--	--	--	--	--	--	--	--	--	--	--	na	1.8E-02
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	3.5E+01	9.4E+00	na	6.4E+04	--	--	--	--	--	--	--	--	--	--	--	--	na	--
DDD ^c	0	--	--	na	3.1E-03	--	--	na	3.1E-03	--	--	--	--	--	--	--	--	--	--	--	--	na	6.4E+04
DDE ^c	0	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	--	--	--	--	--	--	--	--	--	--	na	3.1E-03
DDT ^c	0	1.1E+00	1.0E-03	na	2.2E-03	1.8E+00	1.8E-03	na	2.2E-03	--	--	--	--	--	--	--	--	--	--	--	--	na	2.2E-03
Demeton	0	--	1.0E-01	na	--	1.8E-01	--	na	--	--	--	--	--	--	--	--	--	--	--	--	--	na	2.2E-03
Diazinon	0	1.7E-01	1.7E-01	na	--	2.7E-01	3.1E-01	na	--	--	--	--	--	--	--	--	--	--	--	--	--	na	--
Dibenz(a,h)anthracene ^c	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	5.2E+03	--	--	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	3.8E+03	--	--	--	--	--	--	--	--	--	--	--	--	na	5.2E+03
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	7.6E+02	--	--	--	--	--	--	--	--	--	--	--	--	na	3.8E+03
3,3-Dichlorobenzidine ^c	0	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	--	--	--	--	--	--	--	--	--	--	na	7.6E+02
Dichlorodromomethane ^c	0	--	--	na	1.7E+02	--	--	na	1.7E+02	--	--	--	--	--	--	--	--	--	--	--	--	na	2.8E-01
1,2-Dichloroethane ^c	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	--	--	na	1.7E+02
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	2.8E+04	--	--	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	4.0E+04	--	--	--	--	--	--	--	--	--	--	--	--	na	2.8E+04
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	1.2E+03	--	--	--	--	--	--	--	--	--	--	--	--	na	4.0E+04
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	--	--	na	1.2E+03
1,2-Dichloropropane ^c	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	--	--	na	--
1,3-Dichloropropene ^c	0	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
Dieldrin ^c	0	2.4E-01	5.6E-02	na	5.4E-04	3.8E-01	1.0E-01	na	5.4E-04	--	--	--	--	--	--	--	--	--	--	--	--	na	2.1E+02
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	1.8E+05	--	--	--	--	--	--	--	--	--	--	--	--	na	5.4E-04
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	3.4E+03	--	--	--	--	--	--	--	--	--	--	--	--	na	1.8E+05
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	4.4E+06	--	--	--	--	--	--	--	--	--	--	--	--	na	3.4E+03
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	1.8E+04	--	--	--	--	--	--	--	--	--	--	--	--	na	4.4E+06
2,4-Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	--	--	na	1.8E+04
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	--	--	na	2.1E+04
2,4-Dinitrofluorene ^c	0	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	--	--	--	--	--	--	--	--	--	--	na	1.1E+03
tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	2.0E-07	--	--	--	--	--	--	--	--	--	--	--	--	na	3.4E+01
1,2-Diphenylhydrazine ^c	0	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	--	--	--	--	--	--	--	--	--	--	na	2.0E-07
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	3.5E-01	1.0E-01	na	3.6E+02	--	--	--	--	--	--	--	--	--	--	--	--	na	2.0E+00
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	3.5E-01	1.0E-01	na	3.6E+02	--	--	--	--	--	--	--	--	--	--	--	--	na	3.6E+02
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	3.5E-01	1.0E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	na	3.6E+02
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	3.6E+02	--	--	--	--	--	--	--	--	--	--	--	--	na	--
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	1.4E-01	6.5E-02	na	2.4E-01	--	--	--	--	--	--	--	--	--	--	--	--	na	3.6E+02
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	1.2E+00	--	--	--	--	--	--	--	--	--	--	--	--	na	2.4E-01
	0	--	--	na	3.0E-01	--	--	na	1.2E+00	--	--	--	--	--	--	--	--	--	--	--	--	na	1.2E+00

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	8.4E+03	--	--	--	--	--	--	--	--	--	--	na	8.4E+03
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	5.6E+02	--	--	--	--	--	--	--	--	--	--	na	5.6E+02
Fluorene	0	--	--	na	5.3E+03	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	2.1E+04
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.8E-02	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Hepachlor °	0	5.2E-01	3.8E-03	na	7.9E-04	8.3E-01	6.8E-03	na	7.9E-04	--	--	--	--	--	--	--	--	--	--	na	--
Hepachlor Epoxide °	0	5.2E-01	3.8E-03	na	3.9E-04	8.3E-01	6.8E-03	na	3.9E-04	--	--	--	--	--	--	--	--	--	--	na	--
Hexachlorobenzene °	0	--	--	na	2.9E-03	--	--	na	2.9E-03	--	--	--	--	--	--	--	--	--	--	na	2.9E-03
Hexachlorobutadiene °	0	--	--	na	1.8E+02	--	--	na	1.8E+02	--	--	--	--	--	--	--	--	--	--	na	1.8E+02
Hexachlorocyclohexane	0	--	--	na	4.9E-02	--	--	na	4.9E-02	--	--	--	--	--	--	--	--	--	--	na	4.9E-02
Beta-BHC °	0	--	--	na	1.7E-01	--	--	na	1.7E-01	--	--	--	--	--	--	--	--	--	--	na	1.7E-01
Hexachlorocyclohexane	0	--	--	na	1.8E+00	--	--	na	1.8E+00	--	--	--	--	--	--	--	--	--	--	na	1.8E+00
Gamma-BHC ° (Lindane)	0	9.5E-01	na	na	1.5E+00	--	--	na	1.8E+00	--	--	--	--	--	--	--	--	--	--	na	1.8E+00
Hexachlorocyclopentadiene	0	--	--	na	1.1E+03	--	--	na	4.4E+03	--	--	--	--	--	--	--	--	--	--	na	4.4E+03
Hexachloroethane °	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Hydrogen Sulfide	0	2.0E+00	na	na	--	3.6E+00	na	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Indeno (1,2,3-cd) pyrene °	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone °	0	--	--	na	9.6E+03	--	--	na	9.6E+03	--	--	--	--	--	--	--	--	--	--	na	9.6E+03
Kepone	0	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	--	--	na	--
Lead	0	2.5E+01	3.4E+00	na	--	4.1E+01	6.1E+00	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Malathion	0	--	1.0E-01	na	--	--	1.8E-01	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	2.2E+00	1.4E+00	--	--	--	--	--	--	--	--	--	--	--	--	na	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	6.0E+03	--	--	--	--	--	--	--	--	--	--	na	6.0E+03
Methylene Chloride °	0	--	--	na	5.9E+03	--	--	na	5.9E+03	--	--	--	--	--	--	--	--	--	--	na	5.9E+03
Methoxychlor	0	3.0E-02	na	--	--	5.4E-02	na	--	--	--	--	--	--	--	--	--	--	--	--	na	--
Mirex	0	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	--	--	na	--
Nickel	0	6.5E+01	8.1E+00	na	4.6E+03	1.0E+02	1.5E+01	na	1.8E+04	--	--	--	--	--	--	--	--	--	--	na	1.8E+04
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	2.8E+03	--	--	--	--	--	--	--	--	--	--	na	2.8E+03
N-Nitrosodimethylamine °	0	--	--	na	3.0E+01	--	--	na	3.0E+01	--	--	--	--	--	--	--	--	--	--	na	3.0E+01
N-Nitrosophenylamine °	0	--	--	na	6.0E+01	--	--	na	6.0E+01	--	--	--	--	--	--	--	--	--	--	na	6.0E+01
N-Nitrosodi-n-propylamine °	0	--	--	na	5.1E+00	--	--	na	5.1E+00	--	--	--	--	--	--	--	--	--	--	na	5.1E+00
Nonylphenol	0	2.8E+01	6.6E+00	--	--	4.5E+01	1.2E+01	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	1.0E-01	2.3E-02	na	--	--	--	--	--	--	--	--	--	--	--	na	--
PCB Total °	0	--	1.4E-02	na	6.4E-04	--	2.5E-02	na	6.4E-04	--	--	--	--	--	--	--	--	--	--	na	6.4E-04
Pentachlorophenol °	0	7.7E-03	5.9E-03	na	3.0E+01	1.2E-02	1.1E-02	na	3.0E+01	--	--	--	--	--	--	--	--	--	--	na	3.0E+01
Phenol	0	--	--	na	8.6E+05	--	--	na	3.4E+06	--	--	--	--	--	--	--	--	--	--	na	3.4E+06
Pyrene	0	--	--	na	4.0E+03	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	--	--	na	1.6E+04
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	4.0E+00	--	--	na	1.6E+01	--	--	--	--	--	--	--	--	--	--	na	1.6E+01
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Selenium, Total Recoverable	0	2.0E+01	6.0E+00	na	4.2E+03	3.2E+01	9.0E+00	na	1.7E+04	--	--	--	--	--	--	--	--	3.2E+01	9.0E+00	na	1.7E+04
Silver	0	4.3E-01	--	na	--	6.8E-01	--	na	--	--	--	--	--	--	--	--	--	6.8E-01	--	na	--
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,1,2,2-tetrachloroethane ^c	0	--	--	na	4.0E+01	--	--	na	4.0E+01	--	--	--	--	--	--	--	--	--	--	na	--
Tetrachloroethylene ^c	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	4.0E+01
Trichloroethylene ^c	0	--	--	na	4.7E-01	--	--	na	1.9E+00	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Toluene	0	--	--	na	6.0E+03	--	--	na	2.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.9E+00
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	2.4E+04
Toxaphene ^c	0	7.3E-01	2.0E-04	na	2.8E-03	1.2E+00	3.6E-04	na	2.8E-03	--	--	--	--	--	--	--	--	--	--	na	--
Tributyltin	0	4.6E-01	7.2E-02	na	--	7.4E-01	1.3E-01	na	--	--	--	--	--	--	--	--	--	1.2E+00	3.6E-04	na	2.8E-03
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	2.8E+02	--	--	--	--	--	--	--	--	7.4E-01	1.3E-01	na	--
1,1,2-Trichloroethane ^c	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	2.8E+02
Trichloroethylene ^c	0	--	--	na	3.0E+02	--	--	na	3.0E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02
2,4,6-Trichlorophenol ^c	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	--	--	na	3.0E+02
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	2.4E+01
Vinyl Chloride ^c	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Zinc	0	4.2E+01	4.7E+01	na	2.6E+04	6.7E-01	8.4E+01	na	2.4E+01	--	--	--	--	--	--	--	--	--	--	na	2.4E+01
									1.0E+05	--	--	--	--	--	--	--	--	6.7E-01	8.4E+01	na	1.0E+05

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 20 maximum for Industries and design flow for Municipalis
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing information.
Antidegradation WLAs are based upon a complete mix.
Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
= (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	2.6E+03
Arsenic	1.6E+02
Barium	na
Cadmium	5.2E-01
Chromium III	3.3E+01
Chromium VI	1.0E+01
Copper	2.7E+00
Iron	na
Lead	3.6E+00
Manganese	na
Mercury	8.3E-01
Nickel	8.7E+00
Selenium	5.4E+00
Silver	2.7E-01
Zinc	2.7E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

1/10/2011 3:15:55 PM

Facility = Dominion - Gordonsville

Chemical = Copper

Chronic averaging period = 4

WLAa = 44

WLAc = 39

Q.L. = 2.2

samples/mo. = 1

samples/wk. = 1

Summary of Statistics:

observations = 19

Expected Value = 8.16476

Variance = 28.5871

C.V. = 0.654850

97th percentile daily values = 21.0112

97th percentile 4 day average = 14.1424

97th percentile 30 day average = 10.0009

< Q.L. = 0

Model used = lognormal

No Limit is required for this material

The data are:

4.35
5.16
3.24
8.25
5.13
6.61
3.48
10.3
6.79
17.3
6.81
5.39
4.21
20.9
2.78
4.7
8.94
20.5
10.8

DMR QA/QC

Permit #: VA0087033 Facility: Dominion - Gordonsville Power Station

Due	Outfall	Rec'd	Parameter Description	CONC MAX	Lim Max
10-Apr-2004	001	12-Apr-2004	COPPER, DISSOLVED (UG/L AS CU)	4.35	NL
10-Sep-2004	001	13-Sep-2004	COPPER, DISSOLVED (UG/L AS CU)	5.16	NL
10-Mar-2005	001	14-Mar-2005	COPPER, DISSOLVED (UG/L AS CU)	3.24	NL
10-Oct-2005	001	06-Oct-2005	COPPER, DISSOLVED (UG/L AS CU)	8.25	NL
10-Apr-2006	001	12-Apr-2006	COPPER, DISSOLVED (UG/L AS CU)	5.13	NL
10-Oct-2006	001	10-Oct-2006	COPPER, DISSOLVED (UG/L AS CU)	6.61	NL
10-Nov-2006	001	07-Nov-2006	COPPER, DISSOLVED (UG/L AS CU)	<QL	NL

10-May-2007	001	11-Dec-2006	COPPER, DISSOLVED (UG/L AS CU)	3.48	NL
10-Nov-2007	001	12-Sep-2007	COPPER, DISSOLVED (UG/L AS CU)	10.3	NL
10-Jul-2008	001	11-Jun-2008	COPPER, TOTAL RECOVERAB LE	6.79	NL
10-Oct-2008	001	10-Sep-2008	COPPER, TOTAL RECOVERAB LE	17.30	NL
10-Jan-2009	001	12-Nov-2008	COPPER, TOTAL RECOVERAB LE	6.81	NL
10-Apr-2009	001	11-Mar-2009	COPPER, TOTAL RECOVERAB LE	5.39	NL
10-Jul-2009	001	11-May-2009	COPPER, TOTAL RECOVERAB LE	4.21	NL

10-Oct-2009	001	11-Aug-2009	COPPER, TOTAL RECOVERAB LE	20.90	NL
10-Jan-2010	001	11-Jan-2010	COPPER, TOTAL RECOVERAB LE	2.78	NL
10-Apr-2010	001	12-Feb-2010	COPPER, TOTAL RECOVERAB LE	4.7	NL
10-Jul-2010	001	11-May-2010	COPPER, TOTAL RECOVERAB LE	8.94	NL
10-Oct-2010	001	10-Aug-2010	COPPER, TOTAL RECOVERAB LE	20.5	NL
10-Jan-2011	001	12-Nov-2010	COPPER, TOTAL RECOVERAB LE	10.80	NL

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated industrial wastewater and storm water into a water body in Louisa County, Virginia, and to seek comment on a proposed Water Effect Ratio (WER) study and Chemical Translator Study for that same water body.

PUBLIC COMMENT PERIOD: January 14, 2011 to 5:00 p.m. on February 14, 2011

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Industrial issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Virginia Electric and Power Company, 5000 Dominion Boulevard, Glen Allen, VA 23060, VA0087033

NAME AND ADDRESS OF FACILITY: Virginia Electric and Power Company – Gordonsville Power Station, 115 Red Hill Road, Gordonsville, VA 22942

PROJECT DESCRIPTION: Virginia Electric and Power Company has applied for a modification of a permit for the private Virginia Electric and Power Company – Gordonsville Power Station. The applicant proposes to release treated industrial wastewaters and storm water at a rate of 0.05 million gallons per day into a water body. The facility proposes to release the treated industrial wastewaters and storm water in the South Anna River in Louisa County in the York River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, Dissolved Oxygen, Temperature, Total Residual Chlorine, Total Suspended Solids, and Oil and Grease. Acute toxicity will also be monitored using *Pimephales promelas* and *Ceriodaphnia dubia*.

WATER EFFECT RATIO STUDY AND CHEMICAL TRANSLATOR STUDY: Virginia Electric and Power Company conducted a study to develop a site-specific WER and chemical translator for the purpose of applying the copper water quality criteria, as defined in 9VAC25-260-140(B). The study concluded that the final WER for copper at the specified location is 2.593 and the final chemical translator at the specified location is 0.4052 for the Virginia Electric and Power Company – Gordonsville Power Station VPDES permit.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the documents at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.

Name: Susan Mackert

Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193

Phone: (703) 583-3853 E-mail: susan.mackert@deq.virginia.gov Fax: (703) 583-3821

**State "Transmittal Checklist" to Assist in Targeting
Municipal and Industrial Individual NPDES Draft Permits for Review**

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name: Dominion – Gordonsville (modification to the existing permit)
 NPDES Permit Number: VA0087033
 Permit Writer Name: Susan Mackert
 Date: November 24, 2010

Major ☐Minor ☒Industrial ☒Municipal ☐**I.A. Draft Permit Package Submittal Includes:**

	Yes	No	N/A
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?	X		
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?			X
8. Whole Effluent Toxicity Test summary and analysis?			X
9. Permit Rating Sheet for new or modified industrial facilities?			X

I.B. Permit/Facility Characteristics

	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet or permit contain a description of the wastewater treatment process?	X		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?	X		
7. Does the fact sheet or permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?	X		
a. Has a TMDL been developed and approved by EPA for the impaired water?	X		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?			X
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?		X	
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?	X		
10. Does the permit authorize discharges of storm water?	X		

I.B. Permit/Facility Characteristics – cont.	Yes	No	N/A
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?	X		
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Review Checklist – For Non-Municipals

II.A. Permit Cover Page/Administration

	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements

	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?	X		

II.C. Technology-Based Effluent Limits (Effluent Guidelines & BPJ)

	Yes	No	N/A
1. Is the facility subject to a national effluent limitations guideline (ELG)?	X		
a. If yes, does the record adequately document the categorization process, including an evaluation of whether the facility is a new source or an existing source?	X		
b. If no, does the record indicate that a technology-based analysis based on Best Professional Judgement (BPJ) was used for all pollutants of concern discharged at treatable concentrations?			X
2. For all limits developed based on BPJ, does the record indicate that the limits are consistent with the criteria established at 40 CFR 125.3(d)?	X		
3. Does the fact sheet adequately document the calculations used to develop both ELG and /or BPJ technology-based effluent limits?	X		
4. For all limits that are based on production or flow, does the record indicate that the calculations are based on a “reasonable measure of ACTUAL production” for the facility (not design)?	X		
5. Does the permit contain “tiered” limits that reflect projected increases in production or flow?		X	
a. If yes, does the permit require the facility to notify the permitting authority when alternate levels of production or flow are attained?			X
6. Are technology-based permit limits expressed in appropriate units of measure (e.g., concentration, mass, SU)?	X		
7. Are all technology-based limits expressed in terms of both maximum daily, weekly average, and/or monthly average limits?	X		
8. Are any final limits less stringent than required by applicable effluent limitations guidelines or BPJ?		X	

II.D. Water Quality-Based Effluent Limits

	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the record indicate that any WQBELs were derived from a completed and EPA approved TMDL?			X
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a “reasonable potential” evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the “reasonable potential” evaluation was performed in accordance with the State’s approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have “reasonable potential”?	X		

II.D. Water Quality-Based Effluent Limits – cont.

	Yes	No	N/A
d. Does the fact sheet indicate that the “reasonable potential” and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations where data are available)?	X		
e. Does the permit contain numeric effluent limits for all pollutants for which “reasonable potential” was determined?	X		
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term (e.g., average monthly) AND short-term (e.g., maximum daily, weekly average, instantaneous) effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the fact sheet indicate that an “antidegradation” review was performed in accordance with the State’s approved antidegradation policy?	X		

II.E. Monitoring and Reporting Requirements

	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			X
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require testing for Whole Effluent Toxicity in accordance with the State’s standard practices?	X		

II.F. Special Conditions

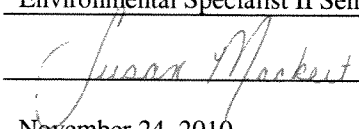
	Yes	No	N/A
1. Does the permit require development and implementation of a Best Management Practices (BMP) plan or site-specific BMPs?	X		
a. If yes, does the permit adequately incorporate and require compliance with the BMPs?	X		
2. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
3. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		

II.G. Standard Conditions

II.G. Standard Conditions		Yes	No	N/A
1. Does the permit contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?		X		
List of Standard Conditions – 40 CFR 122.41				
Duty to comply	Property rights	Reporting Requirements		
Duty to reapply	Duty to provide information	Planned change		
Need to halt or reduce activity	Inspections and entry	Anticipated noncompliance		
not a defense	Monitoring and records	Transfers		
Duty to mitigate	Signatory requirement	Monitoring reports		
Proper O & M	Bypass	Compliance schedules		
Permit actions	Upset	24-Hour reporting		
		Other non-compliance		
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for existing non-municipal dischargers regarding pollutant notification levels [40 CFR 122.42(a)]?		X		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	<u>Susan Mackert</u>
Title	<u>Environmental Specialist II Senior</u>
Signature	<u></u>
Date	<u>November 24, 2010</u>